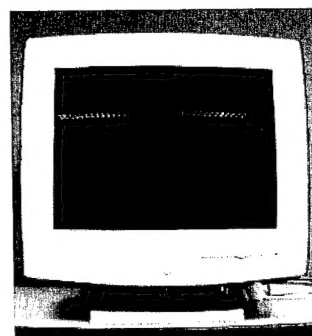


17" Auto scan Color Monitor

Service
Service
Service



17B2302Q/00C



DDC/Audio/Power saving/Tilt correction

Service Manual

Horizontal frequencies
30 - 86 kHz

TABLE OF CONTENTS

Description	Page	Description	Page
PART-I : Technical data		Main Panel C.B.A. (B,C,D,I) -----	18
Important Safety Notice -----	2	Power Supply (C) Schematic Diagram-----	19
Hex Data of DDC1/2B-----	3~4	U-Control (D), Audio input & MIC output (E)	
Warning and Notes -----	5	, Earphone & MIC (F), Control (G), and	
Electrical Adjustments -----	6~8	Power Switch (H) Schematic Diagram -----	20
Quick Reference for OSD Adjustment-----	9~11	Audio (I) Schematic Diagram -----	21
Mechanical Adjustments and Wiring diagram ----	12	Repair Tips and Exploded View -----	22
Block Diagram -----	13	Spare parts list-----	23~25
Video (A), Power Switch (H), Earphone (F),		CM5800 BRIEF -----	26~29
Audio I/P & MIC O/P (E),		PHILIPS.INF (for Windows '95) -----	30
& Control Panel (G) C.B.A.-----	14	HFG Instructions -----	31
Video Panel (A) Schematic Diagram -----	15	PART-II : Service Information 4822 727 21995	
Main Panel (B) Schematic Diagram-----	16	(for using the Service DDC Kit)	
Waveforms for Diagram (B) and (D)-----	17	PART-III : Directions For Use	

REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES

SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING.

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PHILIPS

Proper service and repair is important to the safe, reliable operation of all Philips Consumer Electronics Company** Equipment. The service procedures recommended by Philips and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Philips could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Philips has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Philips must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

* * Hereafter throughout this manual, Philips Consumer Electronics Company will be referred to as Philips.

WARNING

Critical components having special safety characteristics are identified with a ▲ by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol ▲ on the schematics or exploded views.

Use of substitute replacement parts which do not have the same specified safety characteristics may create shock, fire, or other hazards.

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* Broken Line — ■ — ■ — ■

FOR PRODUCTS CONTAINING LASER :
DANGER- Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.
CAUTION- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
CAUTION- The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT,USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS,WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

CM2317BM.chk	

Vendor/Product Identification	
ID Manufacturer Name	: PHL
ID Product Code	: b17b
ID Serial Number	: 12345
Week of Manufacture	: 2
Year of Manufacture	: 1998
EDID Version, Revision	
Version	: 1
Revision	: 1
Basic Display Parameters/Features	
Video Input Definition	: Analog Video Input
	0.700V/0.300V (1.00Vpp)
	without Blank-to-Black Setup
	Separate Sync
	Composite Sync
	Sync on Green
	no Serration required
Maximum H Image Size	: 32 cm
Maximum V Image Size	: 24 cm
Display Transfer Characteristic:	3.000
(gamma)	
Feature Support (DPMS)	: Standby
	Suspend
	Active Off
	RGB color display
Color Characteristics	
Red X coordinate	: 0.635
Red Y coordinate	: 0.333
Green X coordinate	: 0.285
Green Y coordinate	: 0.605
Blue X coordinate	: 0.152
Blue Y coordinate	: 0.068
White X coordinate	: 0.281
White Y coordinate	: 0.311
Established Timings	
Established Timings I	: 720 x 400 @70Hz (VGA,IBM)
	640 x 480 @60Hz (VGA,IBM)
	640 x 480 @75Hz (VESA)
Established timings II	: 800 x 600 @75Hz (VESA)
	1024 x 768 @75Hz (VESA)
	1280 x 1024 @75Hz (VESA)
Manufacturer's timings	:
Standard Timing Identification #1	
Horizontal active pixels	: 640
Aspect Ratio	: 4:3
Refresh Rate	: 85
Standard Timing Identification #2	
Horizontal active pixels	: 800
Aspect Ratio	: 4:3
Refresh Rate	: 85
Standard Timing Identification #3	
Horizontal active pixels	: 1024
Aspect Ratio	: 4:3
Refresh Rate	: 85
Standard Timing Identification #4	
Horizontal active pixels	: 1280
Aspect Ratio	: 4:3

Refresh Rate	: 85
Detailed Timing #1	
Pixel Clock (MHz)	: 36.000
H Active (pixels)	: 640
H Blanking (pixels)	: 192
V Active (lines)	: 480
V Blanking (lines)	: 29
H Sync Offset (F Porch) (pixels):	56
H Sync Pulse Width (pixels)	: 56
V Sync Offset (F Porch) (lines):	1
V Sync Pulse Width (lines)	: 3
H Image Size (mm)	: 306
V Image Size (mm)	: 230
H Border (pixels)	: 0
V Border (lines)	: 0
Flags	: Non-interlaced
	Normal Display, No stereo
	Digital Separate Sync
	Negative V Sync
	Negative H Sync
Detailed Timing #2	
Pixel Clock (MHz)	: 56.250
H Active (pixels)	: 800
H Blanking (pixels)	: 248
V Active (lines)	: 600
V Blanking (lines)	: 31
H Sync Offset (F Porch) (pixels):	32
H Sync Pulse Width (pixels)	: 64
V Sync Offset (F Porch) (lines):	1
V Sync Pulse Width (lines)	: 3
H Image Size (mm)	: 306
V Image Size (mm)	: 230
H Border (pixels)	: 0
V Border (lines)	: 0
Flags	: Non-interlaced
	Normal Display, No stereo
	Digital Separate Sync
	Positive V Sync
	Positive H Sync
Detailed Timing #3	
Pixel Clock (MHz)	: 94.500
H Active (pixels)	: 1024
H Blanking (pixels)	: 352
V Active (lines)	: 768
V Blanking (lines)	: 40
H Sync Offset (F Porch) (pixels):	48
H Sync Pulse Width (pixels)	: 96
V Sync Offset (F Porch) (lines):	1
V Sync Pulse Width (lines)	: 3
H Image Size (mm)	: 306
V Image Size (mm)	: 230
H Border (pixels)	: 0
V Border (lines)	: 0
Flags	: Non-interlaced
	Normal Display, No stereo
	Digital Separate Sync
	Positive V Sync
	Positive H Sync
Detailed Timing #4	
Pixel Clock (MHz)	: 148.500
H Active (pixels)	: 1280
H Blanking (pixels)	: 448
V Active (lines)	: 960
V Blanking (lines)	: 51
H Sync Offset (F Porch) (pixels):	64
H Sync Pulse Width (pixels)	: 160
V Sync Offset (F Porch) (lines)	: 1
V Sync Pulse Width (lines)	: 3
H Image Size (mm)	: 306
V Image Size (mm)	: 230
H Border (pixels)	: 0

Hex Data of DDC1/2B (17B2302Q/00C)

V Border (lines)	: 0
Flags	: Non-interlaced Normal Display, No stereo Digital Seperate Sync Positive V Sync Positive H Sync
Extension Flag	: 0
Check sum	: 8e(hex)

For MEC CRT

```

0:00  1:ff  2:ff  3:ff  4:ff  5:ff  6:ff  7:00
8:41  9:0c 10:7b 11:b1 12:39 13:30 14:00 15:00
16:02 17:08 18:01 19:01 20:0e 21:20 22:18 23:c8
24:e8 25:90 26:22 27:a2 28:55 29:49 30:9b 31:27
32:11 33:48 34:4f 35:a0 36:43 37:00 38:31 39:59
40:45 41:59 42:61 43:59 44:81 45:59 46:01 47:01
48:01 49:01 50:01 51:01 52:01 53:01 54:10 55:0e
56:80 57:c0 58:20 59:e0 60:1d 61:10 62:38 63:38
64:13 65:00 66:32 67:e6 68:10 69:00 70:00 71:18
72:f9 73:15 74:20 75:f8 76:30 77:58 78:1f 79:20
80:20 81:40 82:13 83:00 84:32 85:e6 86:10 87:00
88:00 89:1e 90:ea 91:24 92:00 93:60 94:41 95:00
96:28 97:30 98:30 99:60 100:13 101:00 102:32 103:e6
104:10 105:00 106:00 107:1e 108:02 109:3a 110:00 111:c0
112:51 113:c0 114:33 115:30 116:40 117:a0 118:13 119:00
120:32 121:e6 122:10 123:00 124:00 125:1e 126:00 127:92

```

a: Service DDC Kit**DDC Module (DDC cable), Part number = 4822 320 12004****DDCV2N.EXE software (3.5" disk), Part number = 4822 711 00024****b: Please refer to Service Information 4822 727 21995 for using the Service DDC Kit.**

Warnings

1. Safety regulations require that the unit should be returned in its original condition and that components identical to the original components are used. The safety components are indicated by the symbol **▲**.
2. In order to prevent damage to ICs and transistors, all high-voltage flash-overs must be avoided. In order to prevent damage to the picture tube, the method shown in Fig. 1 should be used to discharge the picture tube. Use a high-voltage probe and a multimeter (position DC-V). Discharge until the meter reading is **0 V** (after approximately 30 seconds).
3. **ESD ▲**
All ICs and many other semiconductors are sensitive to electrostatic discharges (ESD). Careless handling during repair can drastically shorten their life. Make sure that during repair you are connected by a pulse band with resistance to the same potential as the ground of the unit. Keep components and tools also at this same potential.
4. When repairing a unit, always connect it to the AC Power voltage via an isolating transformer.
5. Be careful when taking measurements in the high-voltage section and on the picture tube panel.
6. It is recommended that safety goggles be worn when replacing the picture tube.
7. When making adjustments, use plastic rather than metal tools. This will prevent any short-circuit or the danger of a circuit becoming unstable.
8. Never replace modules or other components while the unit is switched on.
9. Together with the deflection unit, the picture tube is used as an integrated unit. Adjustment of this unit during repair is not recommended.
10. After repair, the wiring should be fastened in place with the cable clamps.

Notes

1. The direct voltages and waveforms are average voltages. They have been measured using the Service test software and under the following conditions :
 - Mode : 1024 * 768 (56.5kHz / 70Hz)
 - Signal pattern : grey scale
 - Adjust brightness and contrast control for the mechanical mid-position (click position)
2. The picture tube panel has printed spark gaps. Each spark gap is connected between an electrode of the picture tube and the Aquadag coating.
3. The semiconductors indicated in the circuit diagram(s) and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

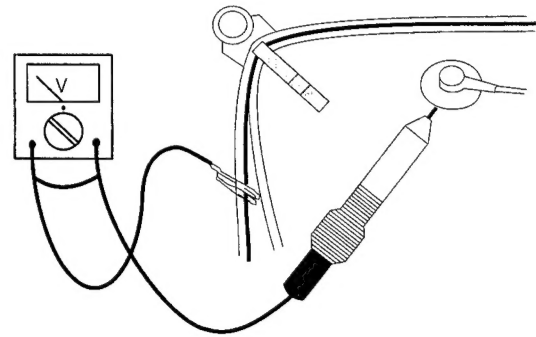


Fig.1

Electrical Adjustments

0. General

When carry-out the electrical settings in many cases a video signal must be applied to the monitor. A computer with :

- ATI GPT-1600 (4822 397 10065), Mach 64 (up to 107kHz)

are used as the video signal source. The signal patterns are selected from the "service test software" package, see user guide 4822 727 21046 (GPT-1600).

0.1 This monitor has 13 factory-preset modes as below.

640 x 400 31.5 kHz/70 Hz	1024 x 768 48.0 kHz/60 Hz
640 x 480 31.5 kHz/60 Hz	1024 x 768 60.0 kHz/75Hz
640 x 480 37.5 kHz/75 Hz	1024 x 768 68.7 kHz/85 Hz
640 x 480 43.0 kHz/85 Hz	1280 x 1024 64.0 kHz/60Hz
800 x 600 37.9 kHz/60Hz	1280 x 1024 80.0 kHz/75Hz
800 x 600 46.9 kHz/75Hz	1280 x 960 85.9 kHz/85 Hz
800 x 600 53.6 kHz/85 Hz	

0.2 With normal VGA card:

If not using the ATI card during repair or alignment, The service engineer also can use this service test software adapting with normal standard VGA adaptor and using standard VGA mode 640 x 480, 31.5 kHz/60 Hz (only) as signal source.

0.3 AC/DC Measurement:

The measurements for AC waveform and DC figure is based on 640 x 480 31.5 kHz/60 Hz resolution mode with test pattern "gray scale".
Power input: 110V AC

1. B+ supply voltage (3165) 78Vdc

- Apply a video signal in the 800 x 600 with 46.9 kHz/75Hz mode.
- Select the "cross-hatch" pattern.
- Set the brightness control and the contrast control to the minimum position.
- Pre-set trimming potentiometer 3165(+) and 3661(EHT) in mid-position.
- Set Vg2 (screen) to fully Counter-clockwise (zero beamcurrent).
- Connect a dc voltmeter between the joint of capacitor 2154 and ground (common ground).
- Set the B+ trimming potentiometer 3165 so that the reading on the dc voltmeter is 78 V +/- 0.2 Vdc.

2. High-voltage EHT (3661)

- Apply a video signal in the 800 x 600 with 46.9 kHz/75Hz mode.
- Select the "cross-hatch" pattern.
- Set the brightness control and the contrast control to the minimum position.
- Turn off the power.
- Connect a "high-voltage voltmeter" between the high-voltage connection of the picture tube and earth.
- Turn on the power.
- Set the EHT trimming potentiometer 3661 so that the "high-voltage voltmeter" reads 25.0 kV +/- 0.2 kV.
- Turn off the power.
- Remove the "high-voltage voltmeter" from the picture tube.
- Turn on the power again.
- Remove the "high-voltage voltmeter" from the picture tube.
- Turn on the power again.

3. Monitor the following auxiliary voltages.

SOURCE ACROSS C2158 + 12.0V +/- 1.0VDC (Audio).
SOURCE ACROSS C2160 + 12.5V +/- 0.3VDC.
SOURCE ACROSS C2156 - 6.3 V +/- 0.2VDC.
SOURCE ACROSS C2152 + 191.0V +/- 1.5VDC.
SOURCE ACROSS C2154 + 78.0 V +/- 0.2VDC.

4. General conditions for alignment

- 4.1 During all alignments, supply a distortion free AC mains voltage to set via an isolating transformer with low internal impedance.
- 4.2 Align in pre-warmed condition, at least 30 minutes warm-up with nominal picture brightness.
- 4.3 Purity, geometry and subsequent alignments should be carried out in magnetic cage with correct magnetic field.


Northern hemisphere : H=0, V=450 mG, Z=0

Southern hemisphere : H=0, V=-450 mG, Z=0




Equatorial Support : H=0, V=0 mG, Z=0

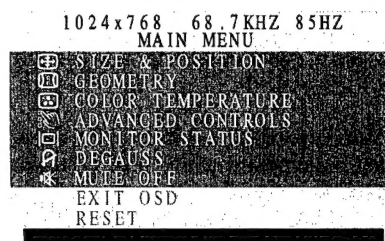
- 4.4 All voltages are to be measured or applied with respect to ground.




Note: Do not use heatsink as ground.


- 4.5 Adjust function controls "  " to center position except for contrast control which should be set to MAX.
- 4.6 Apply a video signal in the 1280 x 1024 with 64kHz/60Hz mode, select cross hatch pattern, set the Brightness for visible raster, adjust H-size for 340mm (19" monitor)/300mm (17" monitor) "raster width", adjust R3551 for Horizontal raster center.

5. To access factory mode:

- Turn off monitor (don't turn off PC)
- Hold "  " and "  " simultaneously on the front control panel, then press "  ", wait till the OSD menu with characters " factory mode (below OSD menu)" comes on the screen of monitor.



- If OSD menu disappears on the screen of monitor, press "  " again (anytime), then the OSD menu comes on the screen again.
- using "  " : to select OSD menu.
- using "  " : to increase or decrease the setting.

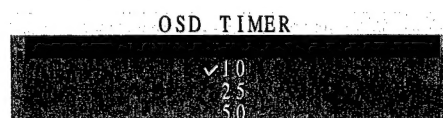
- Using "  " to confirm the selection.

5.1. To leave factory mode

* After alignment of factory mode, turn off monitor (if you do not turn off monitor, the OSD menu is always at the factory mode), then turn on monitor again (at this moment, the OSD menu goes back to user mode).

6. OSD TIMER (During alignment)

During alignment, please use the "OSD TIMER" to keep OSD menu on screen.



TIMER Set OSD display time.

7. Alignment of Vg2 cut-off point, white tracking (OSD control)

Equipment : 1. Video Test Generator-801GC (Quantum Data)
2. Color-analyzer (Minolta CA-100)

VG2 [(screen), at the bottom of the L.O.T.].

- * Apply a video signal in the 800 x 600 with 46.9 kHz/75 Hz mode, select the "full white pattern" (sizes 306 x 230 mm).
- * Use color-analyzer (Minolta CA-100) to adjust cutoff and white uniformity.

OSD R/G/B cut-off and R/G/B gain can be accessed, with initial data:

9300°K

R cutoff = 25%, R gain = 65% (I²C)
G cutoff = 25%, G gain = 65% (I²C)
B cutoff = 25%, B gain = 65% (I²C)

6500°K

R cutoff = 25%, R gain = 55% (I²C)
G cutoff = 25%, G gain = 55% (I²C)
B cutoff = 25%, B gain = 55% (I²C)

Brightness = 50%, Sub-Contrast = 85%, ABL = 50% (I²C)

Step 1: To select the character "FACTORY MODE" as shown in Fig. 2.1, press " " to access the OSD menu for R/G/B gain & cutoff as shown in Fig. 2.2.

Step 2: Press " " for function selection as shown in Fig. 2.3.

Step 3: Use " " to increase or decrease the value as shown in Fig. 2.3.

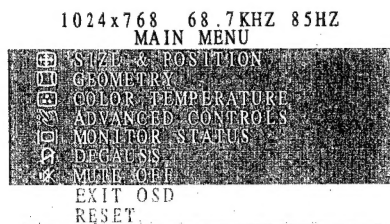


Fig. 2.1

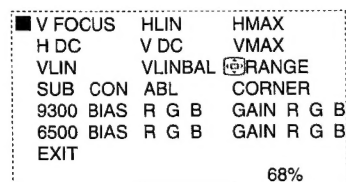


Fig. 2.2

V FOCUS : Vertical Focus
H LIN : Horizontal Linearity
H MAX : Horizontal size maximum
V MAX : Vertical size maximum
H DC : Horizontal DC (raster) Shift
V DC : Vertical DC (raster) Shift
V LIN : Vertical Linearity
VLINBAL : Vertical Linearity Balance
RANGE : Zoom range
SUB CON : Sub Contrast
ABL : Auto Beam Limit
CORNER : Corner Correction
BIAS R G B : R(red) G(green) B(blue) cutoff

Press " "

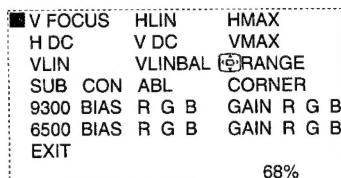


Fig. 2.3

- 7.1 Connect the video input, set brightness control at 50% and contrast at minimum position (OSD), Vg2 at Minimum (counter clockwise, and ABL (OSD) at 50% position.
Slowly increase Vg2 voltage until light output is at 0.1 Ft-L +/- 0.01Ft-L (Y=0.1 Ft-L, on the screen of CA-100) .

- 7.2 (The screen of monitor is dark now)

: Press " " to show the OSD menu as shown in Fig. 2.1.

: Select the character "FACTORY MODE" to access the R/G/B adjustment as shown in Fig. 2.2 and Fig. 2.3.

: Adjust the cutoff of R/G/B to get 9300K (x=0.281 +/- 0.015, y=0.311 +/- 0.015), and brightness output at 0.07 +/- 0.01 Ft-L (Y=0.07Ft-L).

- 7.3 : Press " " to set contrast at maximum (100%).

: Adjust gain of R/G/B to get 9300K (x=0.281 +/- 0.015, y=0.311 +/- 0.015, don't care about the Y value)

- 7.4 Apply a small white square 10 x 10 cm pattern, brightness set to center (50%), and contrast at maximum (100%), adjust Sub-contrast control (OSD) to reach 50 +/- 1 Ft-L.

- 7.5 Apply full white pattern at 9300K, adjust ABL (OSD) to reach 30 +/- 1 Ft-L (contrast at maximum 100%, brightness at center 50%).

- 7.6 : Select the 6500K colour temperature as shown in Fig. 2.2.

: Adjust the R/G/B cutoff and R/G/B gain as shown in procedure 7.2-7.3 to get R/G/B cutoff x= 0.313 +/- 0.015 y= 0.329 +/- 0.015

R/G/B gain x= 0.313 +/- 0.015
y= 0.329 +/- 0.015
Y= 45 +/- 1 Ft-L

8. Picture geometry setting (factory pre-set modes)

- Apply a video signal with cross-hatch pattern.
- Apply a video signal in the 1024 x 768 with 46.9 kHz/75 Hz mode.
- Set brightness and contrast controls to their center positions (OSD control).

8.1 Horizontal geometry (OSD control)

- Adjust the H-width to 306 mm
- Adjust the H-phase to center position.

8.2 Vertical geometry (OSD control)

- Adjust vertical size to 230 mm
- Adjust V-phase to center position.

8.3 Trapezoid distortion (OSD control)

- Adjust the trapezoid to get optimal vertical lines.

8.4 Pincushion (OSD control)

- Adjust the pincushion to get optimal vertical line.

8.5 Parallelogram (OSD control)

- Adjust parallelogram so that vertical lines are vertical or symmetrically about the center vertical axis.

8.6 Unbalance-pin (OSD control)

- Adjust the unbalance-pin so that that vertical border lines are aligned symmetrically.

8.7 Rotation (OSD control)

- Adjust picture so that vertical tilt is less than +/- 0.5mm.

8.8 Store the preset results by selecting the "exit" (OSD control).**8.9 Repeat the procedure 8.1 to 8.8 until all the preset timings have been adjusted completely****9. Focus adjustment**

- : Apply a video signal in the 1024 x 768 with 60 kHz/75 Hz mode.
- : Select " @ " pattern.
- : Set the brightness at center (50%) and the contrast at maximum (100%).
- : Adjust focus potentiometers (top of L.O.T.) Focus 1 for horizontal focus and Focus 2 for vertical focus so that the picture at 2/3 of the diagonal lines (from center to four corners) of the displayed screen is as sharp as possible.

10. Loading DDC code

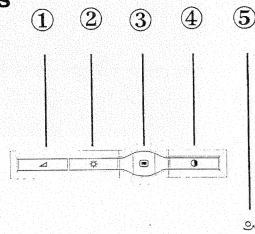
The DDC HEX data should be written into the DDC IC (7331) by EEPROM writer or equivalent method.

a: Service DDC Kit

DDC Module (DDC cable), Part number = 4822 320 12004
DDCV2N.EXE software (3.5" disk), Part number = 4822 711 00024

b: Please refer to Service information 4822 727 21995 for using the Service DDC Kit.

Front Controls

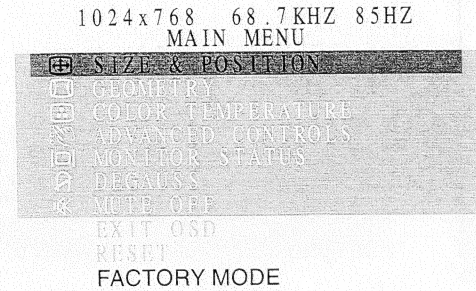


Descriptions of knobs and keypads on front control panel

- ① Adjust volume of internal speakers and earphone output.
- ② Adjust brightness of the display.
- ③ To access OSD menu.
- ④ Adjust contrast of the display.
- ⑤ To scroll the OSD function and adjust the scale of the selected function.

To access factory mode:

- Turn off monitor (don't turn off PC)
- Press " " and " " and "power knob of Monitor" simultaneously, until the VIDEO (pattern) comes on the screen of monitor.
- After that, press " ", the OSD main menu with characters "FACTORY MODE"(below OSD menu) come on the screen as below.

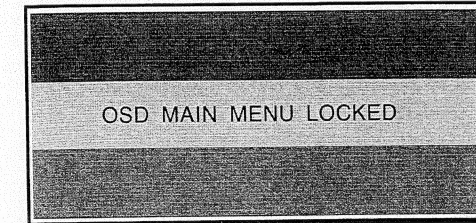


To leave factory mode:

- Turn off monitor (don't turn off PC)
- Turn on monitor (don't turn off PC)
- Then return to user mode

To lock (disable) OSD function:

- Press " " for 10 minutes to lock the OSD function. OSD comes on the screen as below.



To unlock (enable) OSD function:

- Press " " for 10 minutes again to unlock the OSD function. OSD comes on the screen as below.



First Level

SIZE & POSITION

GEOMETRY

COLOR TEMPERATURE

ADVANCED CONTROLS

MONITOR STATUS

DEGAUSS

MUTE OFF / ON

EXIT OSD

RESET

Second Level

ZOOM
HORIZONTAL POSITION
HORIZONTAL SIZE
VERTICAL POSITION
VERTICAL SIZE
SAVE & RETURN TO MAIN MENU
RECALL

ROTATION
PINCUSHION
TRAPEZOID
BALANCED PINCUSHION
PARALLELOGRAM
SAVE & RETURN TO MAIN MENU
RECALL

9300°
6500°
USER 1
USER 2
SAVE & RETURN TO MAIN MENU
RECALL

POWER SAVING ON / OFF
LANGUAGES
DDC1/2B ON / OFF
OSD TIMER
MOIRÉ
SYNC INPUT SELECT
SAVE & RETURN TO MAIN MENU
RECALL

PRESET MODE
NEW MODE

NO
YES

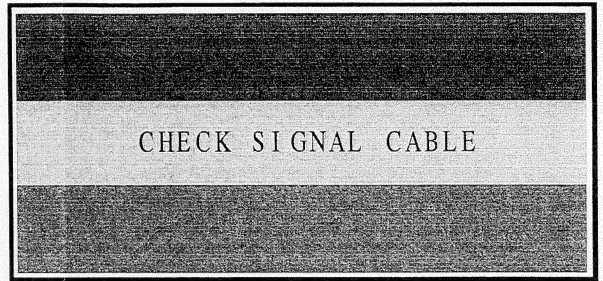
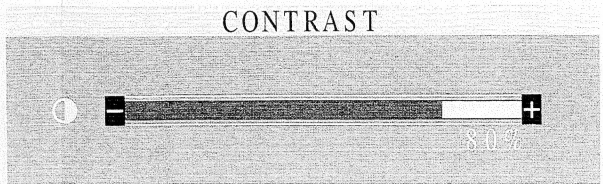
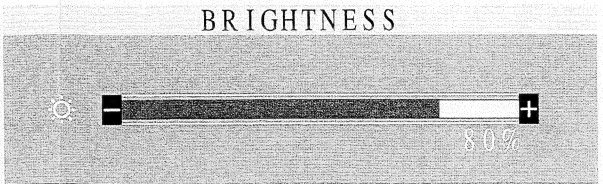
Third Level

RED (RED COLOR)
GREEN (GREEN COLOR)
BLUE (BLUE COLOR)
SAVE & RETURN TO MAIN MENU
RECALL
RED (RED COLOR)
GREEN (GREEN COLOR)
BLUE (BLUE COLOR)
SAVE & RETURN TO MAIN MENU
RECALL

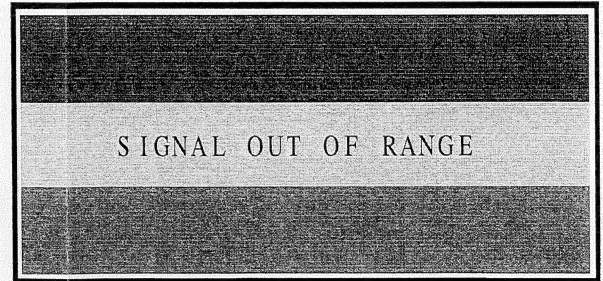
ENGLISH
DEUTSCH
FRANÇAIS
ITALIANO
ESPAÑOL

5
10
25
50

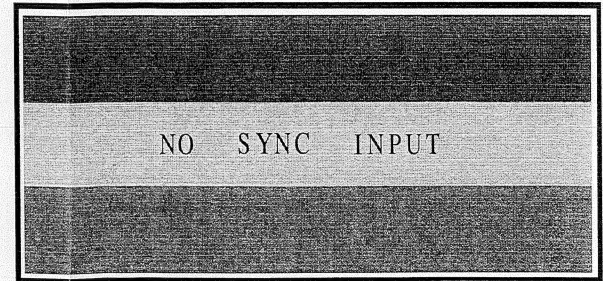
H
V
SAVE & RETURN TO MAIN MENU
CANCEL
TTL SYNC
SYNC ON GREEN
SAVE & RETURN TO MAIN MENU
RECALL



Remark: (SELF TEST : for the pin 5 of Interface cable)



Remark: Horizontal Frequency out of range



Remark: 1. Interface cable do not connect to computer when power on.
2. Interface cable without pin5 & there is no sync. input, or interface cable disconnect.

Third Level

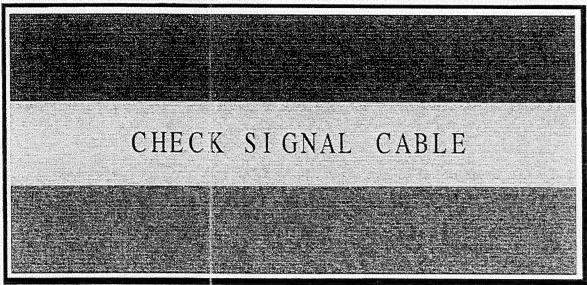
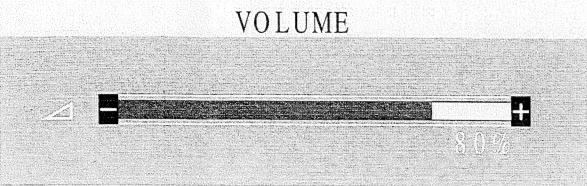
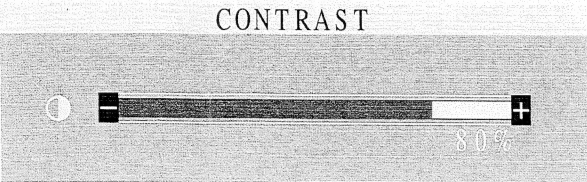
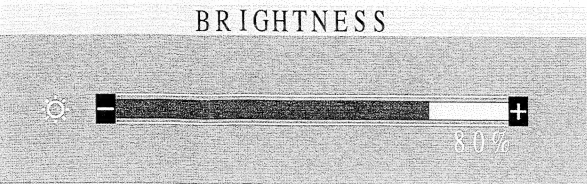
MENU

- MENU
- RED (RED COLOR)
 - GREEN (GREEN COLOR)
 - BLUE (BLUE COLOR)
 - SAVE & RETURN TO MAIN MENU
 - RECALL

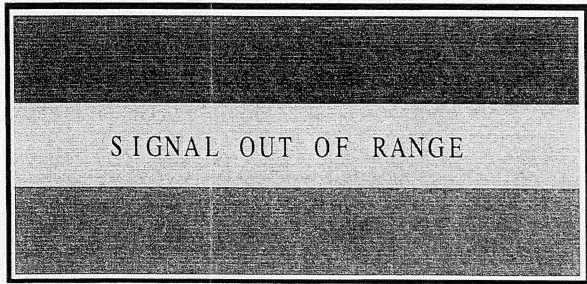
- OFF
- ENGLISH
 - DEUTSCH
 - FRANÇAIS
 - ITALIANO
 - ESPAÑOL

- 5
 - 10
 - 25
 - 50
- H
- V
 - SAVE & RETURN TO MAIN MENU
 - CANCEL
- TTL SYNC
- SYNC ON GREEN
 - SAVE & RETURN TO MAIN MENU
 - RECALL

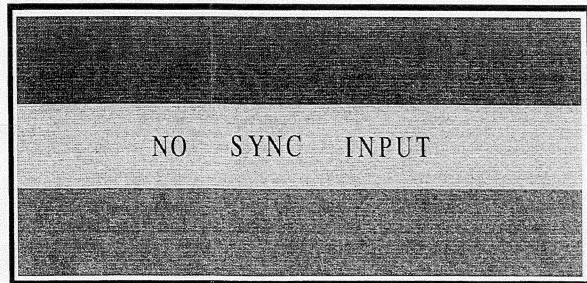
AIN MENU



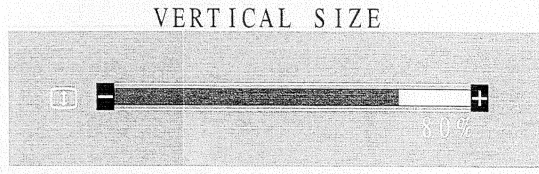
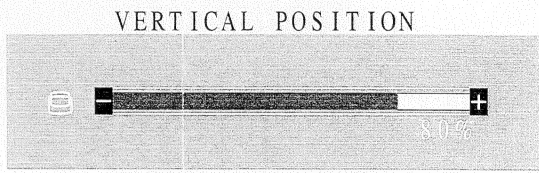
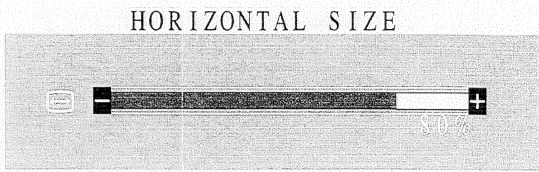
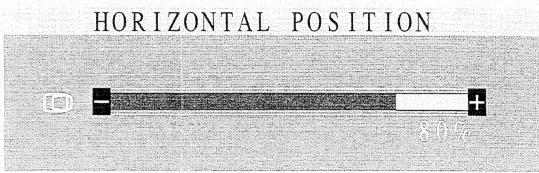
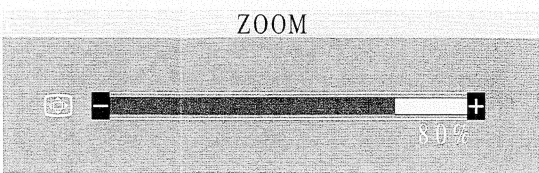
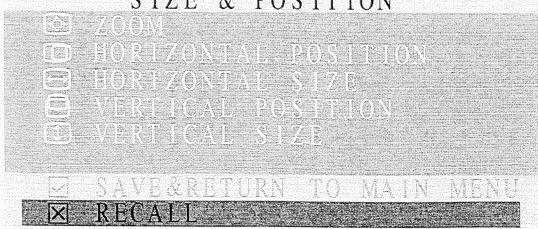
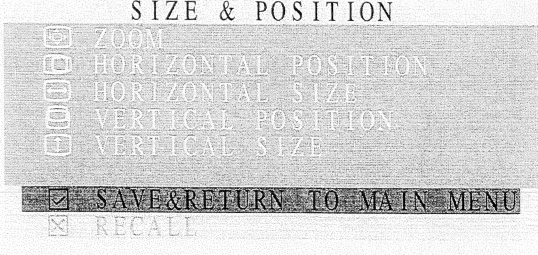
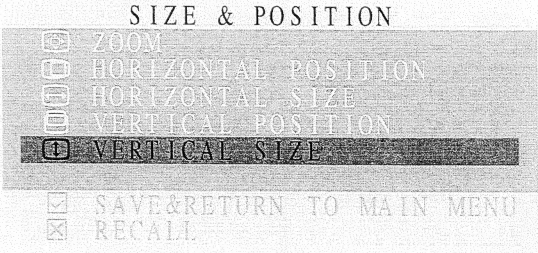
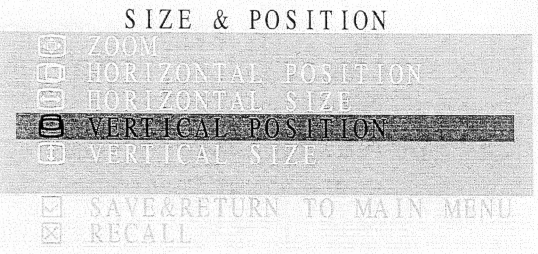
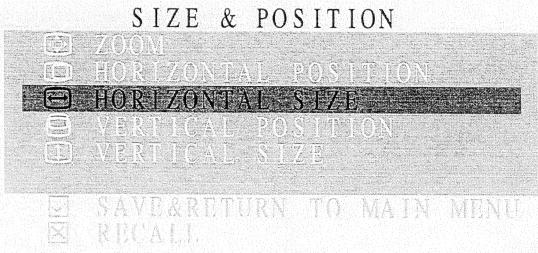
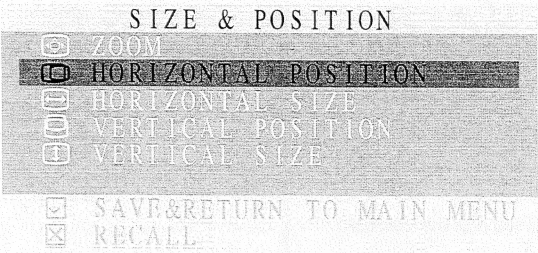
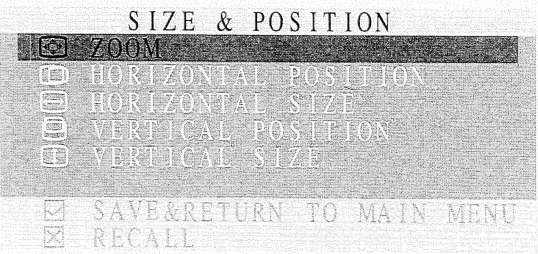
Remark: (SELF TEST : for the pin 5 of Interface cable)

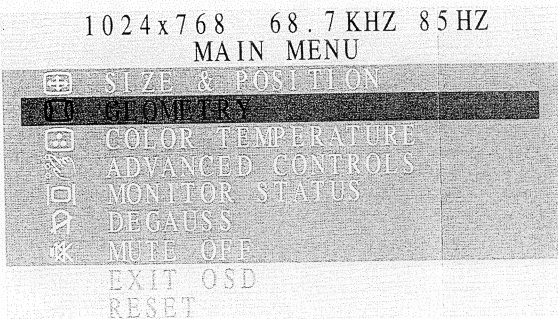


Remark: Horizontal Frequency out of range

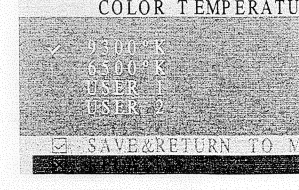
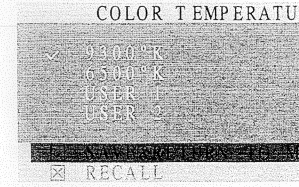
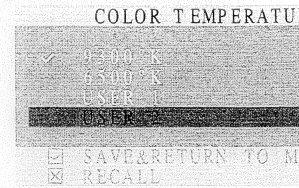
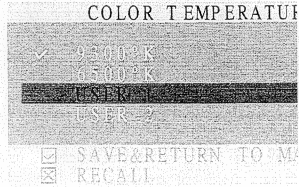
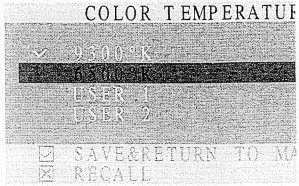
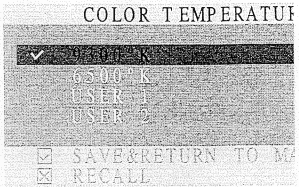
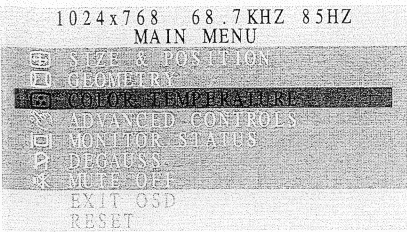
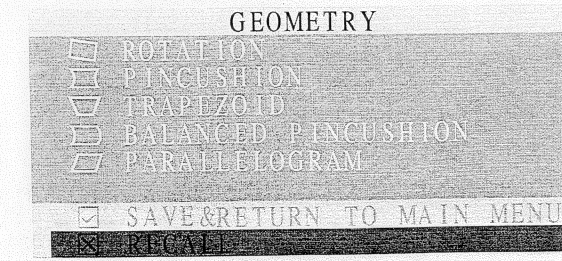
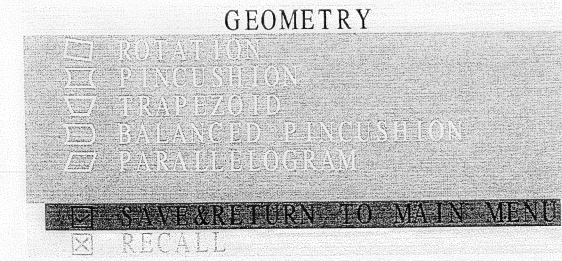
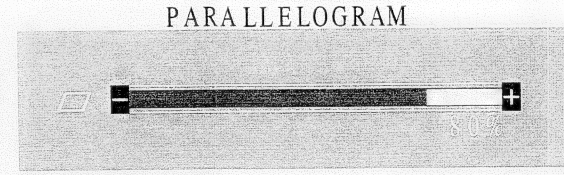
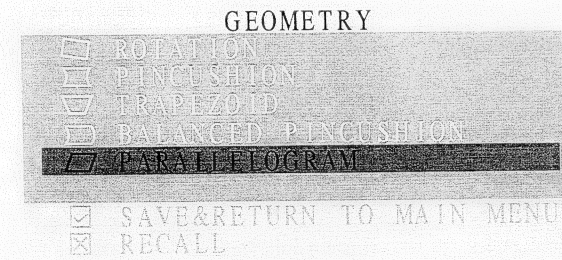
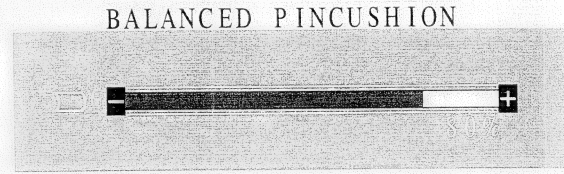
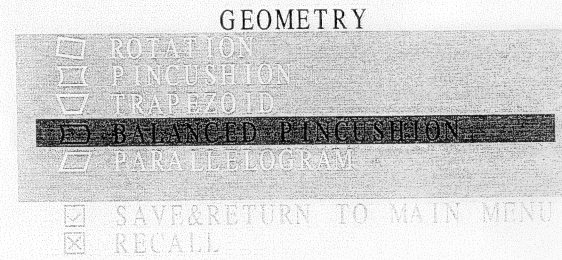
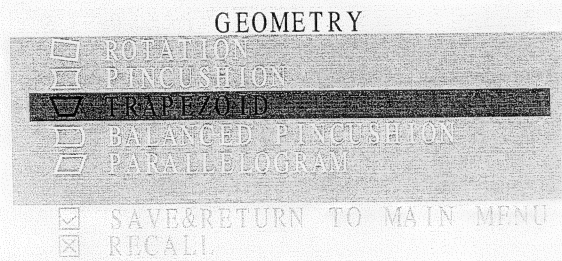
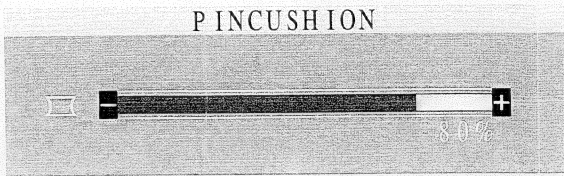
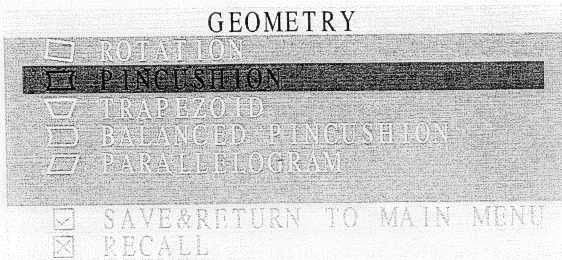
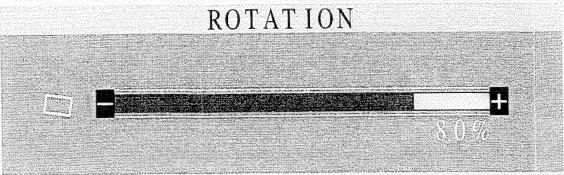
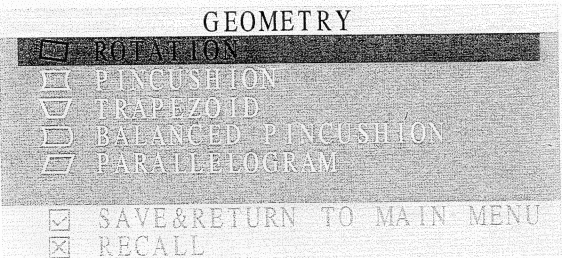


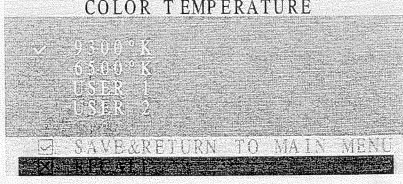
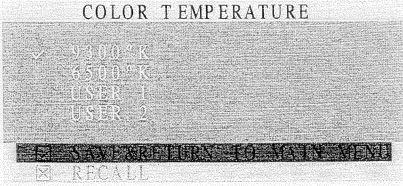
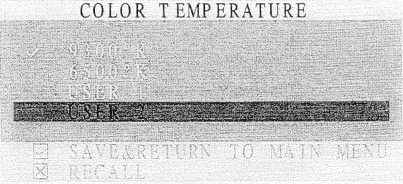
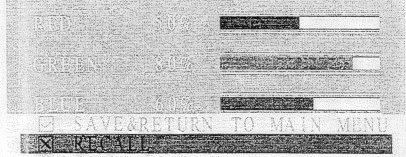
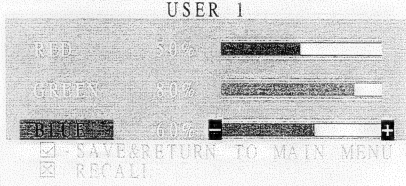
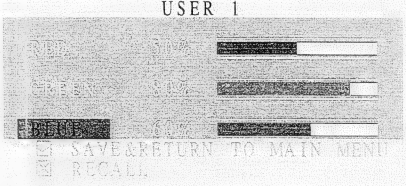
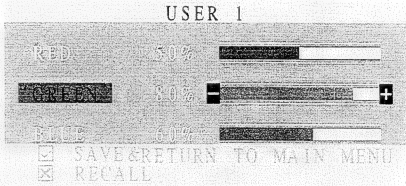
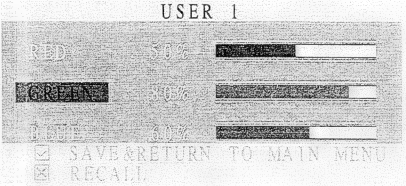
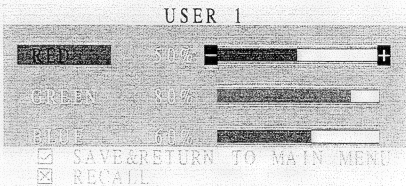
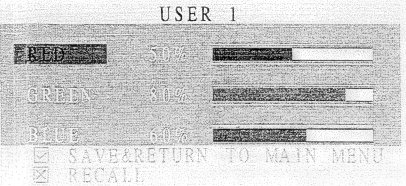
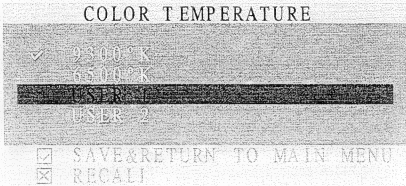
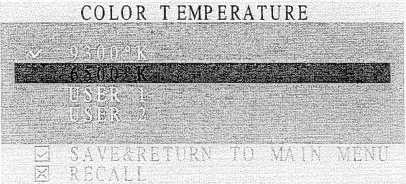
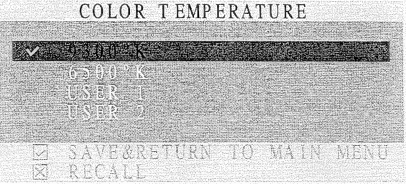
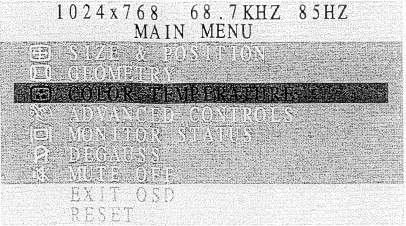
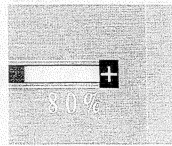
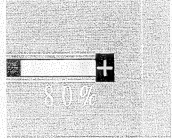
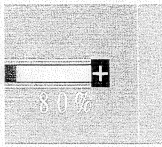
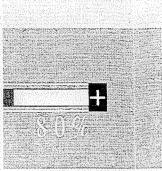
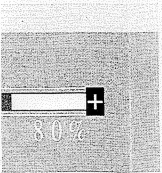
Remark: 1. Interface cable do not connect to computer when power on.
2. Interface cable without pin5 & there is no sync. input, or interface cable disconnect.



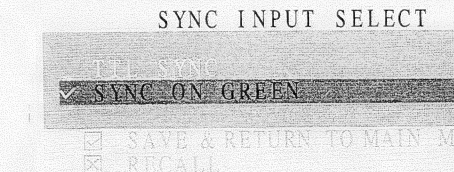
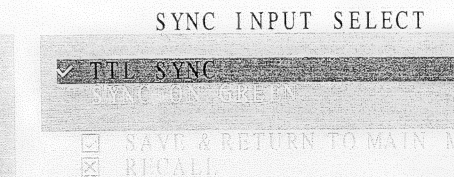
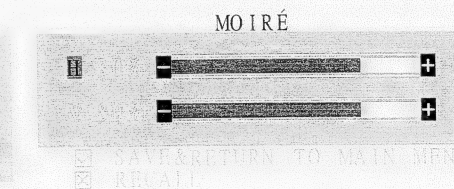
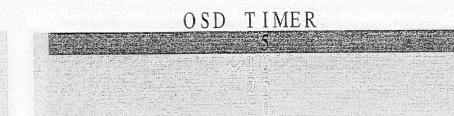
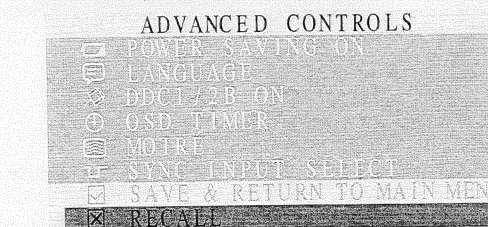
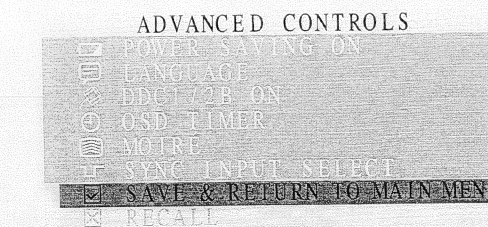
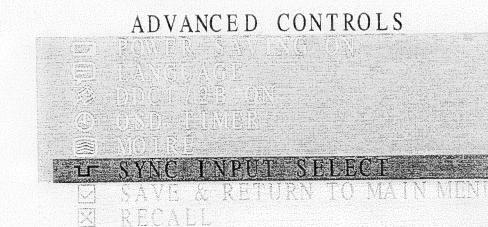
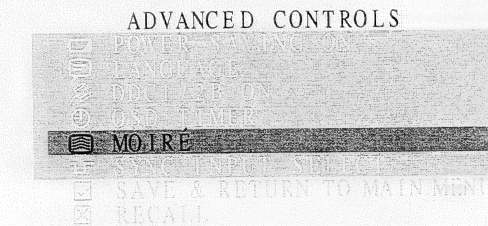
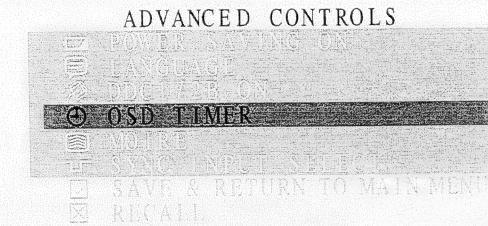
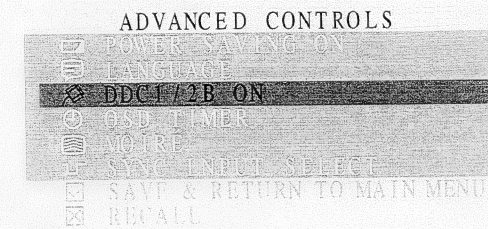
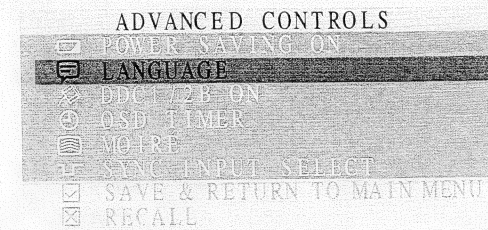
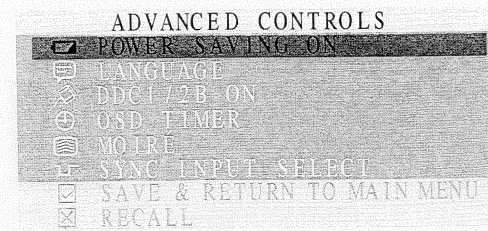
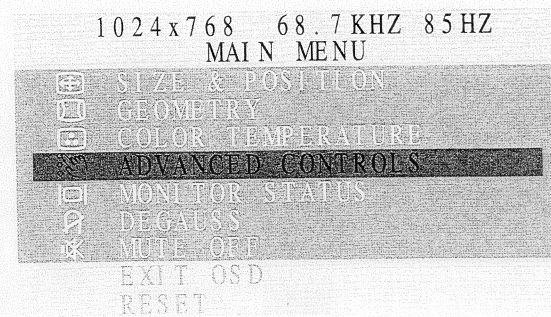


Quick Reference for OSD Adjustment (Continued)

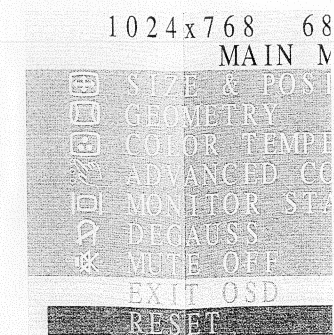
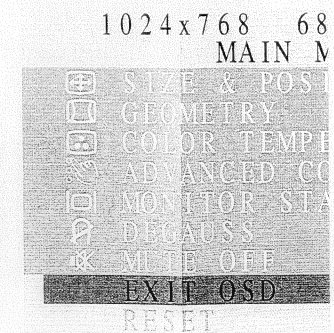
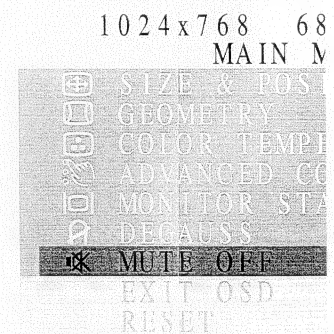
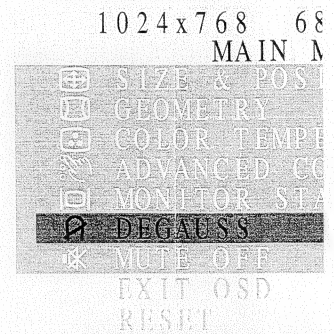
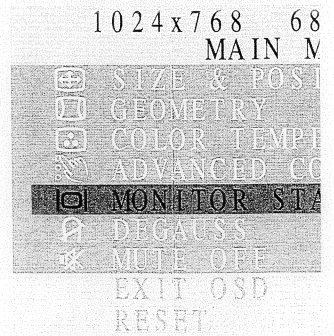




Quick Reference for OSD Adjustment (Continued)



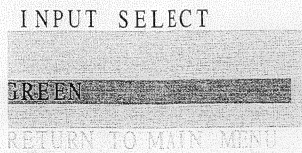
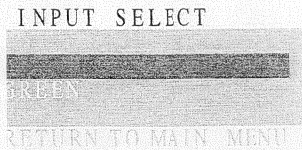
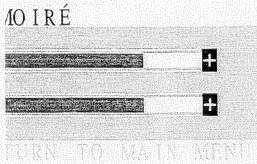
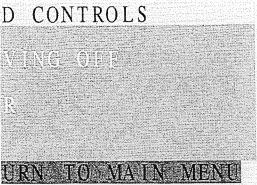
ATTENTION
PLEASE MAKE SURE YOUR
VEDIO CARD HAS
SYNC ON GREEN



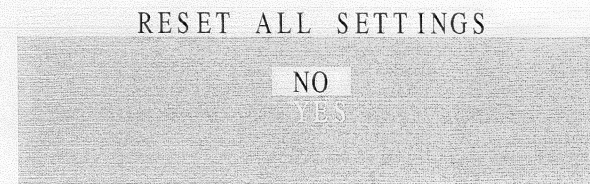
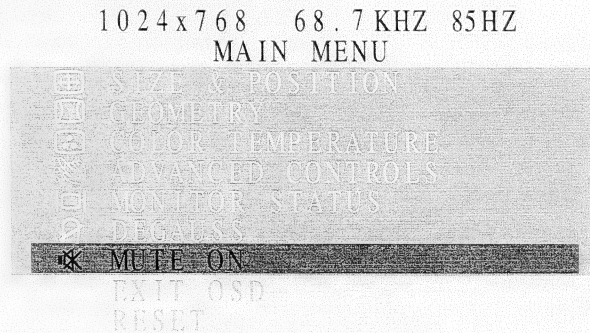
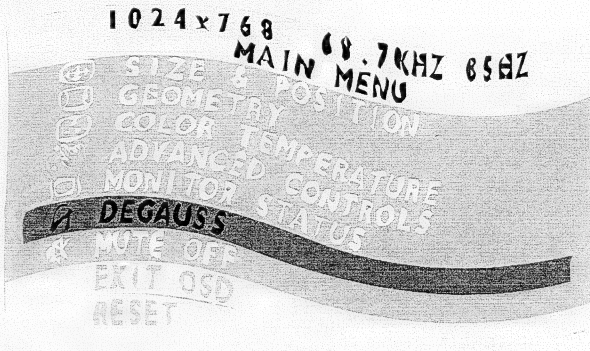
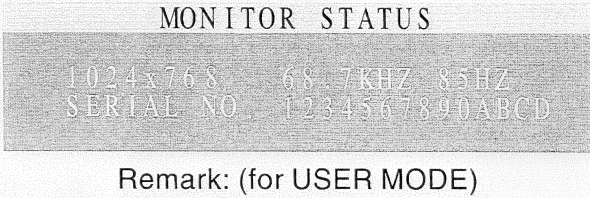
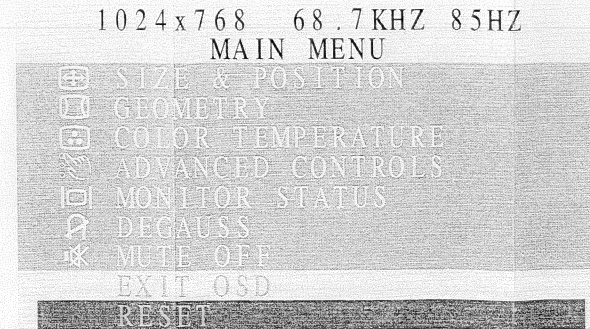
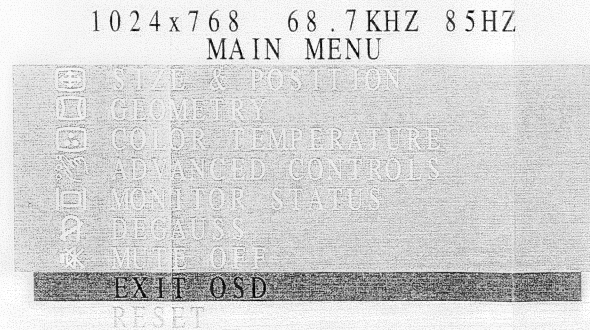
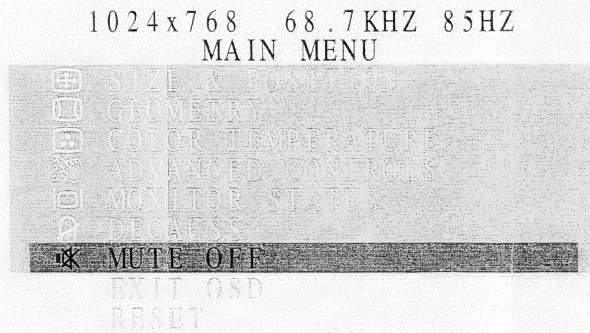
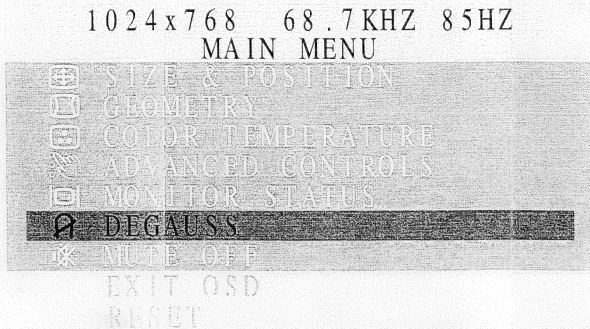
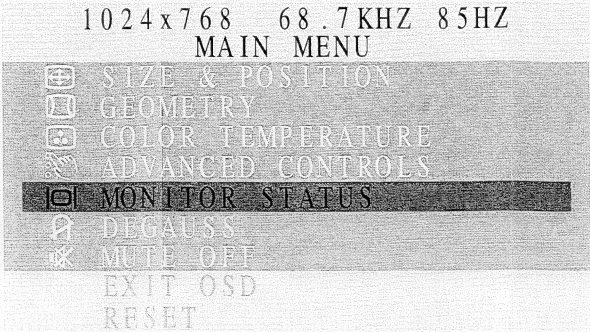
Quick Reference for OSD Adjustment (Continued)

17B CM2300

11



ATTENTION
PLEASE MAKE SURE YOUR
VEDIO CARD HAS
SYNC ON GREEN



Remark: (for FACTORY MODE)

DDC ICON:
If select " √ ", then DDC1/2B ON/OFF
shows on the advanced controls.
Default setting is ON.

HW DDC (hardware DDC):
Always select " √ ".

SOG:
If select " √ ", then SYNC INPUT SELECT
shows on the advanced controls for
"TTL SYNC" or "SYNC ON GREEN" selection.

Mechanical Adjustments

0. Location of the panel

- 0.1 Main panel (1156)
- 0.2 Video panel (1157)
- 0.3 Power switch panel (1158)

1. General

To be able to perform measurements and repairs on the circuit boards, the monitor should placed in **Service Position (Fig. 3.1)** first:

How to remove the back cover of monitor :

There are 2 screws on the bottom of the monitor to fix the front cabinet and back cover of the monitor.

- Step 1: Remove the "cable cover" as shown in Fig. 3.2.
- Step 2: Turn the set to remove the 2 screws on the bottom side, as shown in Fig. 3.3 .
- Step 3: Turn the set to its original position.
- Step 4: Remove back cover,then see left side view as shown in Fig.3.4.
- Step 5: Turn the set, then see right side view as shown in Fig.3.5.

Chassis :

- After removing the back cover, you can see the inside the monitor with metal frame and metal shield.see top side view as shown in Fig.3.6.
- Remove 13 screws and cut away 6 wire ties for service position as Fig. 3.1.

Video panel :

- Cut off 2 wire ties,after removing the metal frames, remove the metal shielding on rear side of Video panel for measurement.

Main panel :

- After removing the metal frames,
- Disconnect "Video panel"
- Disconnect EHT cable (EHT cap)
- Disconnect 4 pin connector "M1401" (wire of YOKE, on Main panel)
- Disconnect 2 pin connector "M1112" (degaussing coil, on Main panel)
- Disconnect 1 pin connector "M1703" (on Video panel)
- Disconnect 5 pin connector "M1201" (on Main panel)
- Disconnect 6 pin connector "M1802" (on Main panel)
- Disconnect 2 pin connector "M1205" (on Main panel)
- Disconnect 4 pin connector "M1204" (on Main panel)
- Disconnect 4 pin connector "M1207" (on Main panel)
- To slide out Main panel.
- Connect all the connectors and panels for service position.

Service position :
Place monitor in service position as shown in Fig. 3.1

2. Repair instructions

After the service position is obtained, all the panel's copper trace sides may be accessed.

1156

SERVICE POSITION Fig. 3.1

cable cover

screw

Fig. 3.2

Fig. 3.3

Fig. 3.4

Fig. 3.5

Fig. 3.6

Fig. 3.6

1158

1157

BLACK RED

BRANDED MODEL USB HUB

F801

INSERT TO USB CONNECTOR BOARD

1056

1055 1054 1053 1052 1051

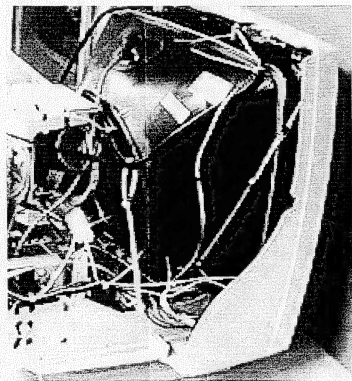
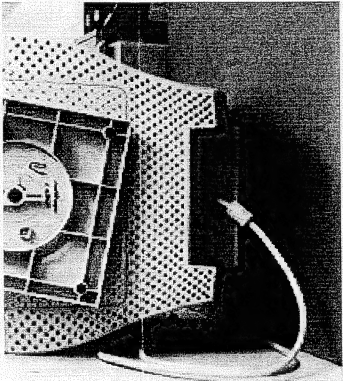
OEM MODEL USB HUB

TO A

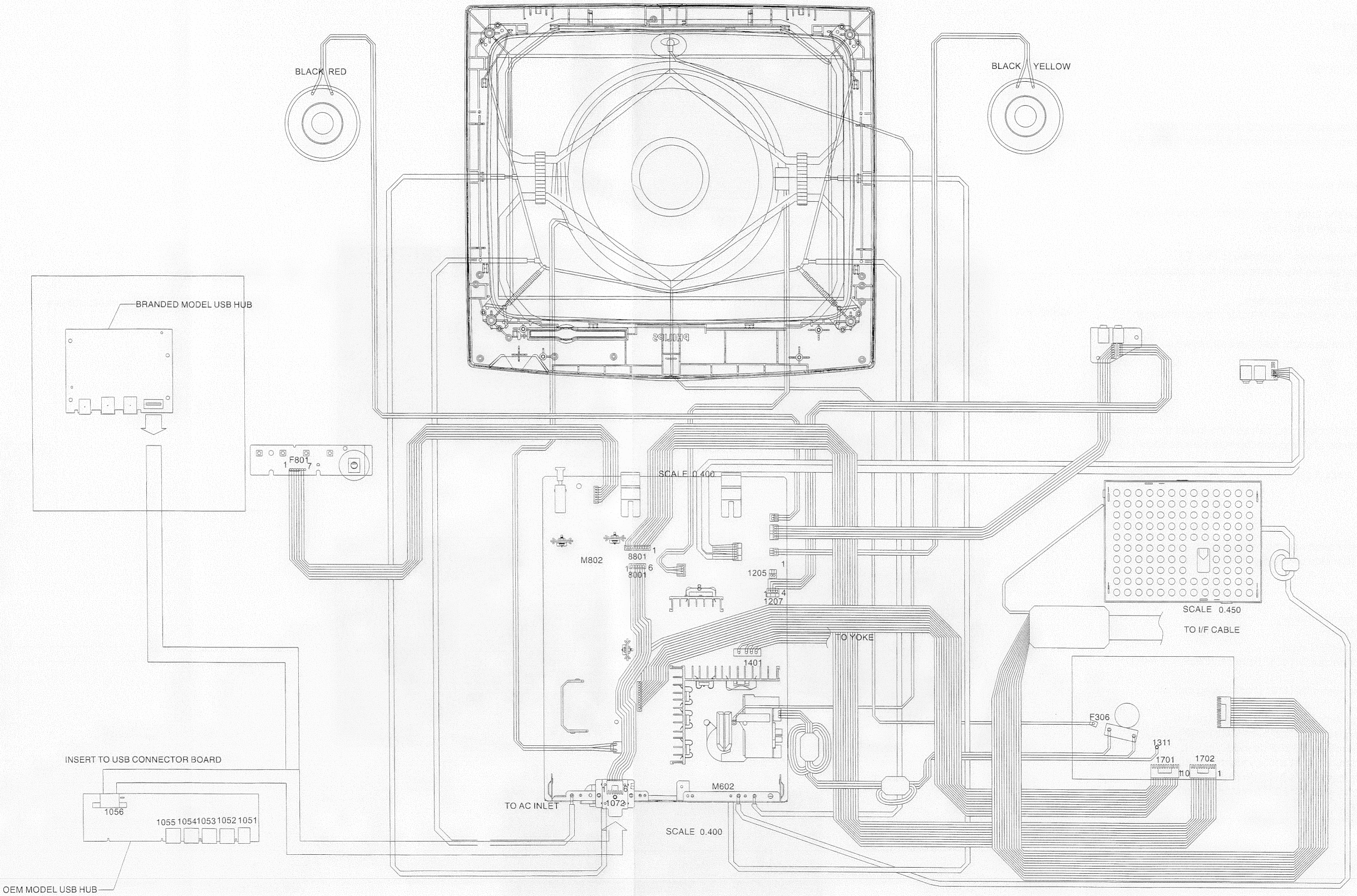
SCALE 0.400

1158

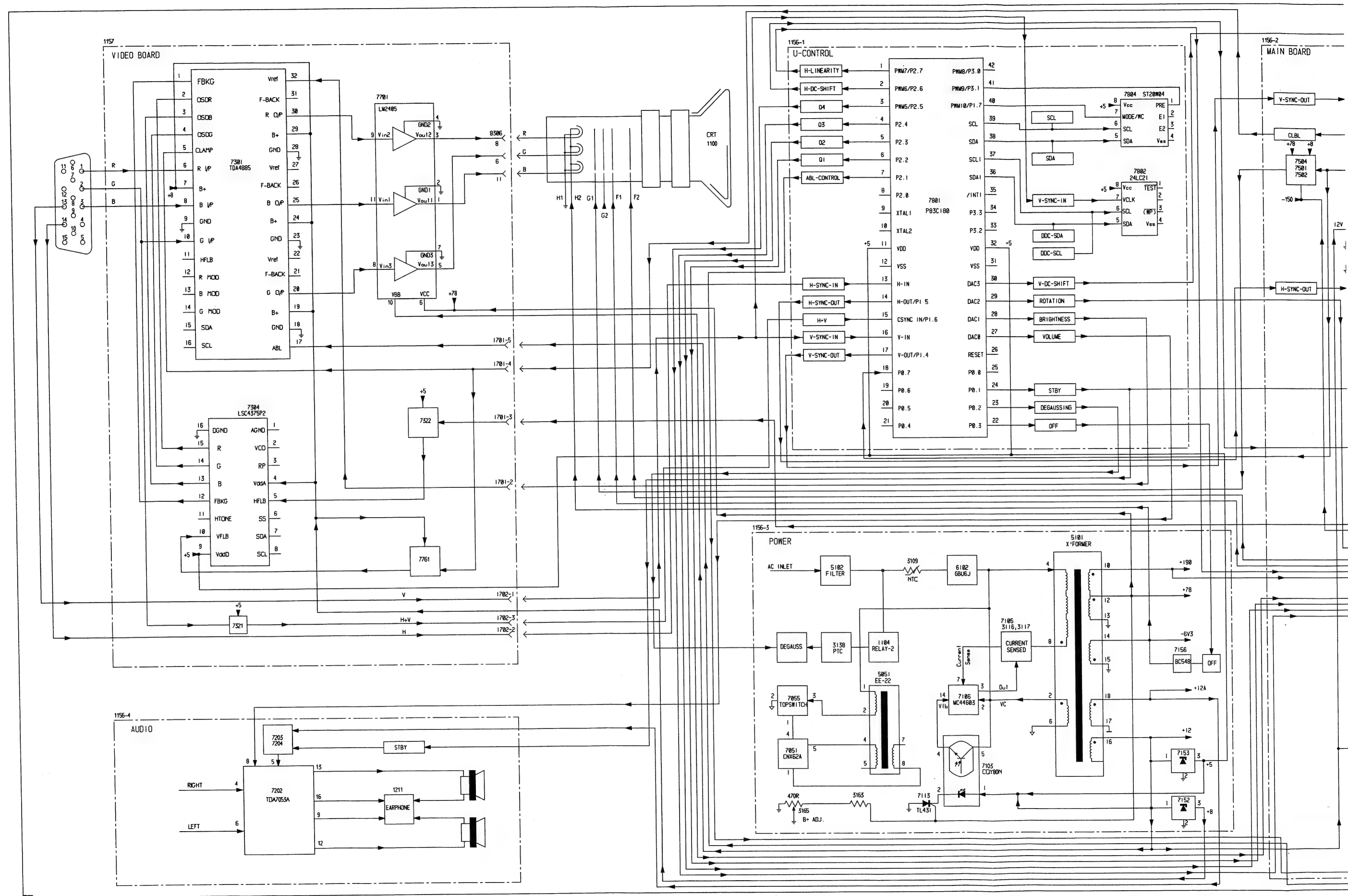
1157



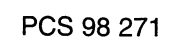
5



Block Diagram



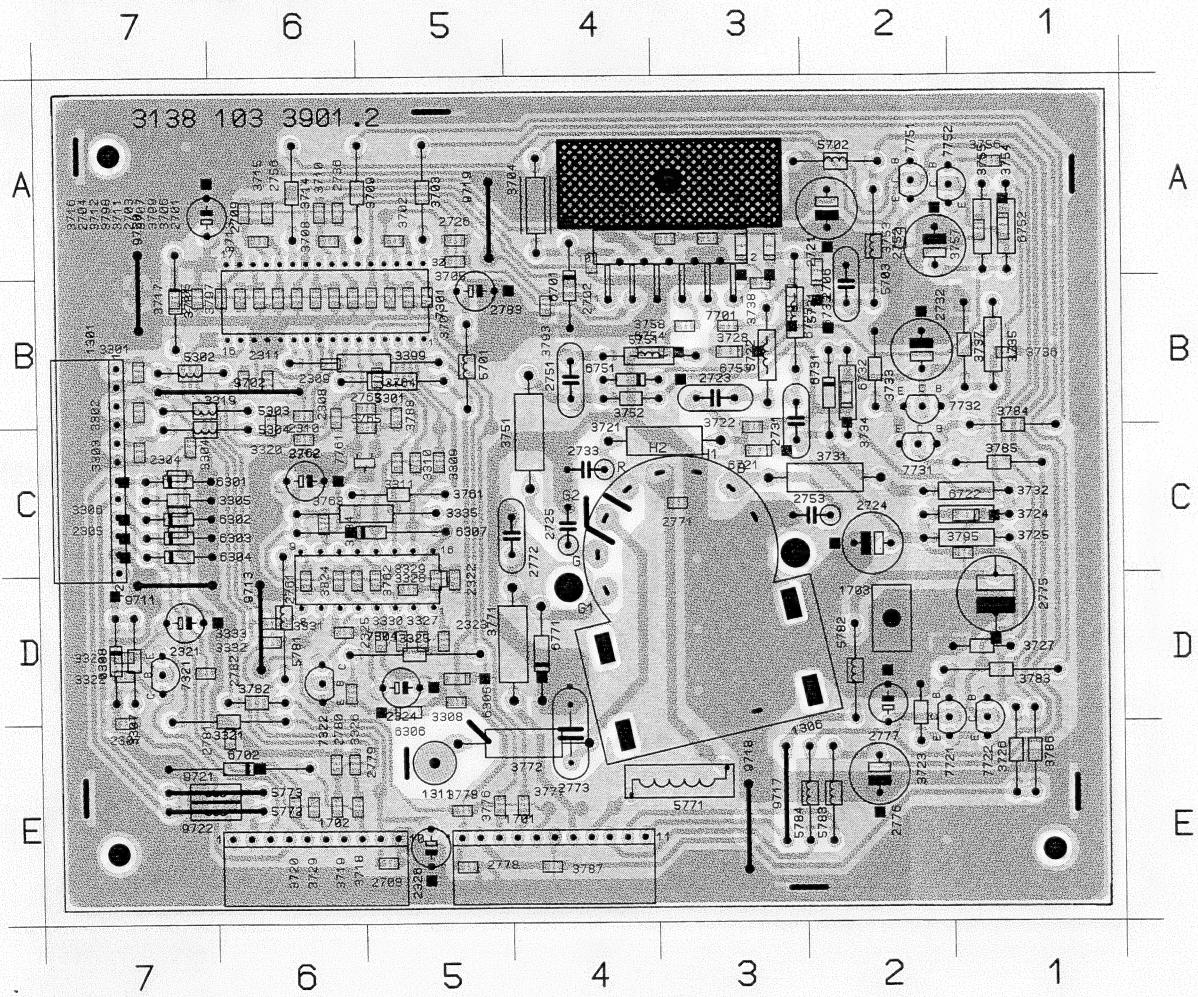
17B CM2300 13



Video Panel C.B.A. (A)

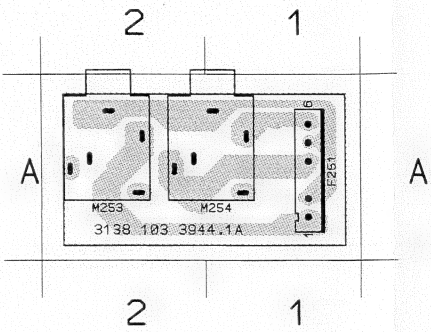
87-01-16 39012MAP.GER

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6734 A 3	3782 D 6	3710 A 6	2775 E 2	1311 E 5
6751 B 4	3783 D 1	3711 B 6	2777 E 2	1781 E 5
6752 A 1	3784 C 1	3712 B 6	2778 E 5	1782 E 6
6753 B 3	3785 C 1	3713 A 6	2779 E 6	1783 D 2
6754 B 4	3786 D 1	3714 A 6	2780 E 6	2304 C 7
6771 D 4	3787 E 4	3715 A 6	2781 E 6	2305 C 7
7301 B 5	3788 B 5	3716 B 6	2782 D 7	2307 D 7
7304 D 5	3793 B 4	3717 B 7	2783 B 5	2308 B 6
7321 D 7	3794 A 4	3718 E 6	3301 B 7	2309 B 6
7322 D 6	3795 C 1	3719 E 6	3302 B 7	2310 B 6
7701 B 3	3797 B 6	3720 E 6	3303 C 7	2311 B 6
7721 D 2	3798 B 6	3721 C 3	3304 C 7	2321 D 7
7722 D 1	3799 B 5	3722 C 3	3305 C 7	2322 D 5
7731 C 2	5381 B 6	3723 D 2	3306 C 7	2323 D 5
7732 B 2	5382 B 7	3724 C 2	3307 D 7	2324 D 5
7751 A 2	5383 B 7	3725 C 2	3308 D 5	2325 D 5
7752 A 1	5384 C 7	3726 D 1	3309 C 5	2326 E 5
7761 C 5	5781 B 5	3727 D 1	3310 C 5	2781 B 5
9702 B 6	5782 A 2	3728 B 3	3311 C 5	2782 A 4
9711 D 7	5783 A 2	3729 E 6	3318 C 6	2783 B 6
9713 D 6	5722 B 3	3731 C 2	3319 B 6	2784 B 6
9717 E 3	5731 A 3	3732 C 1	3320 C 6	2785 B 7
9718 E 3	5751 B 3	3733 B 2	3321 D 7	2785 A 2
9719 A 5	5771 E 4	3734 B 2	3322 D 7	2787 A 3
9720 A 7	5772 E 7	3735 B 1	3323 D 7	2788 E 5
9721 E 7	5773 E 7	3736 B 1	3324 D 6	2789 A 7
9722 E 7	5781 C 6	3737 B 1	3325 D 6	2721 A 2
	5782 D 2	3738 B 3	3326 D 6	2722 A 3
	5783 E 2	3751 B 4	3327 D 5	2723 B 3
	5784 E 2	3752 B 3	3328 D 5	2724 C 2
	6301 C 7	3753 A 2	3329 C 5	2725 C 4
	6302 C 7	3754 A 1	3330 E 5	2726 A 5
	6303 C 7	3755 A 1	3331 D 6	2731 B 3
	6304 C 7	3756 A 1	3332 D 6	2732 B 2
	6305 D 5	3757 A 1	3333 D 6	2733 C 4
	6306 D 5	3758 B 3	3334 C 6	2736 A 6
	6307 C 5	3761 C 6	3335 C 6	2751 B 4
	6308 D 7	3762 C 5	3399 B 5	2752 A 2
	6701 B 4	3763 C 6	3701 B 5	2753 C 2
	6702 E 7	3764 B 5	3702 A 5	2755 A 6
	6721 C 3	3765 B 6	3703 A 5	2781 C 6
	6722 C 1	3771 D 4	3704 A 4	2782 C 6
	6723 B 3	3772 E 5	3705 A 5	2783 B 5
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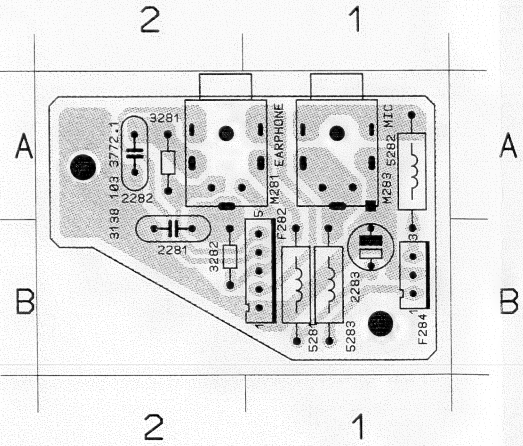
Audio I/P & MIC O/P Panel C.B.A. (E)

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M254 A 1 M253 A 2 F251 A 1

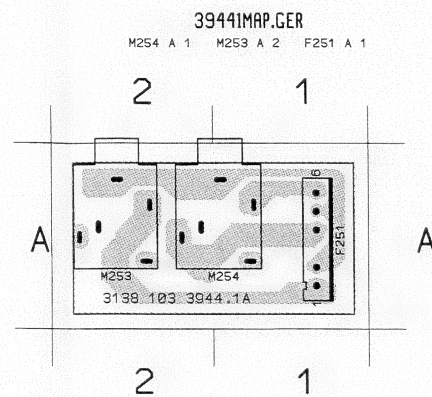
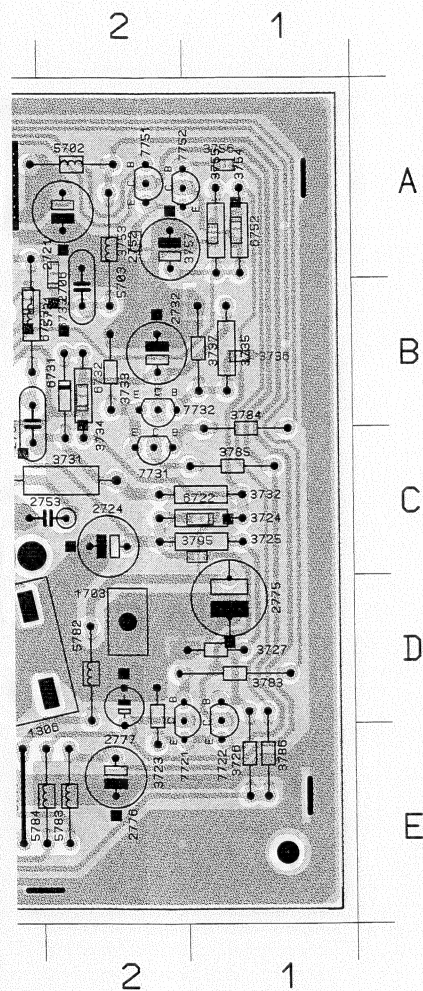


Earphone Panel C.B.A. (F)

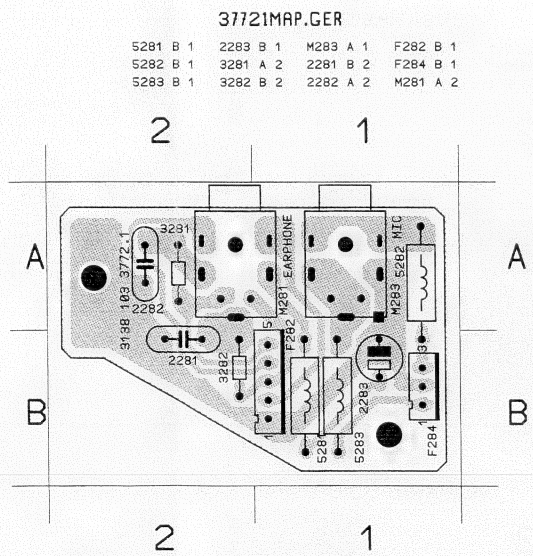
37721MAP.GER
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5283 B 1 3282 B 2 2282 A 2 M281 A 2



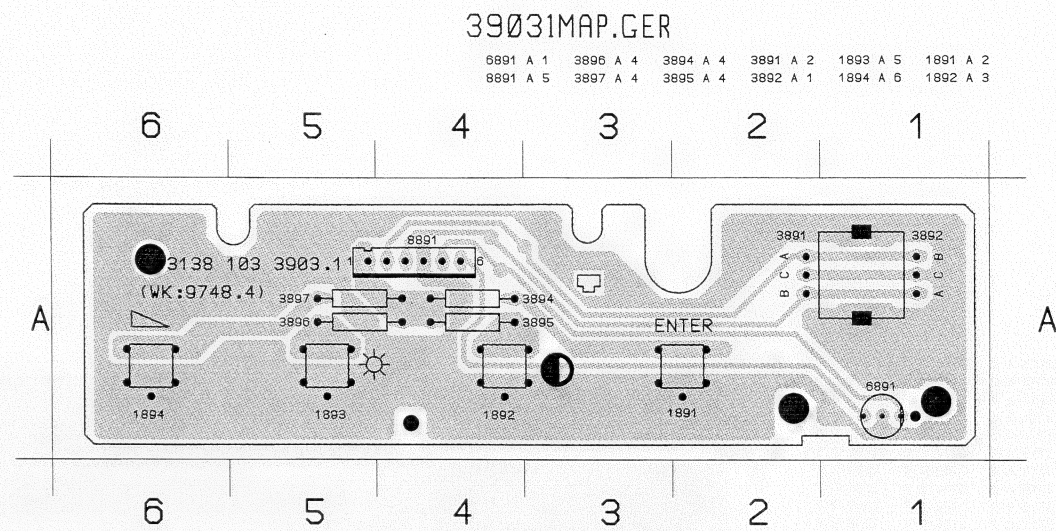
Audio I/P & MIC O/P Panel C.B.A. (E)



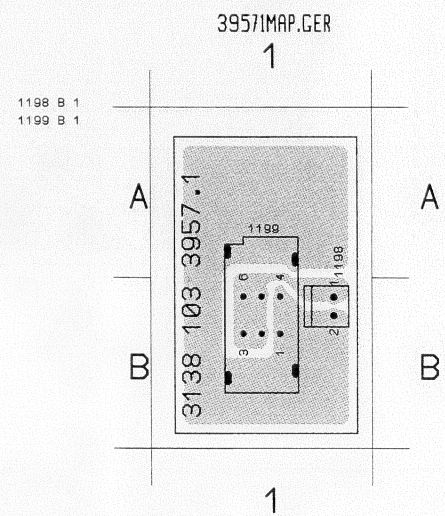
Earphone Panel C.B.A. (F)

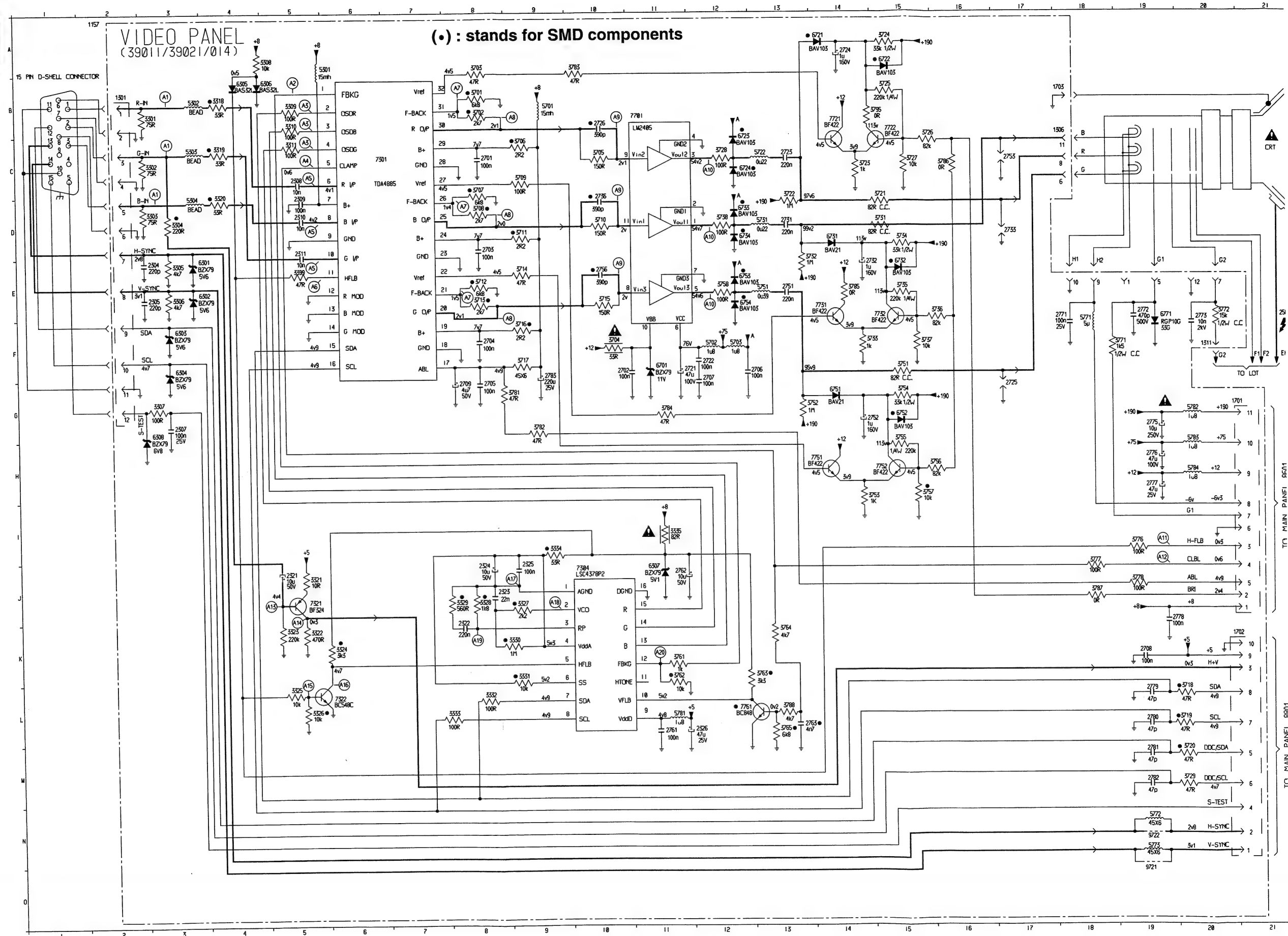


Control Panel C.B.A. (G)

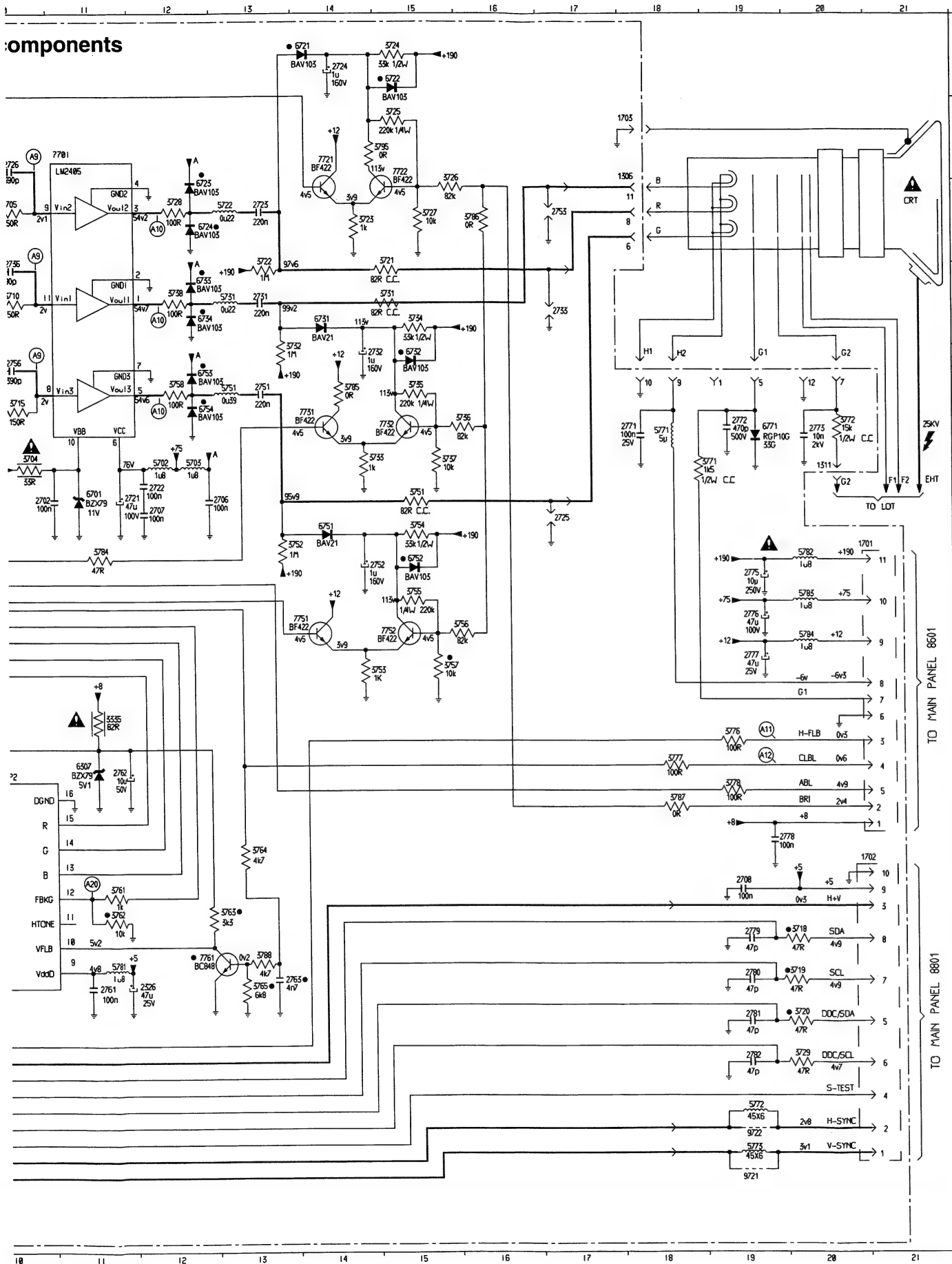


Power Switch Panel C.B.A. (H)

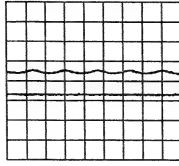




Components

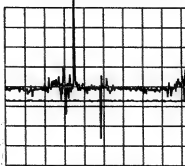


A1 1301-1



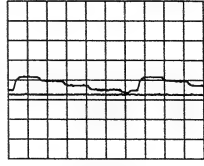
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10 mS/div

A4 7301-5



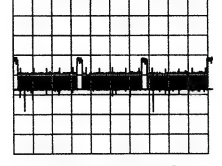
2 V/div AC
5 uS/div

A7 7301-21



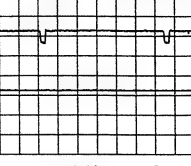
2 V/div AC
5 uS/div

A10 7701-3



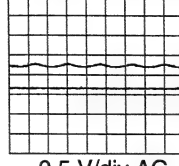
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5 uS/div

A15 7322-B



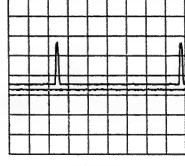
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10 uS/div

A1 1301-3



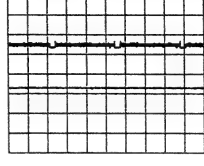
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10 mS/div

A5 7301-6



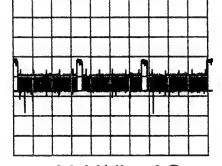
1 V/div AC
5 uS/div

A8 7301-30



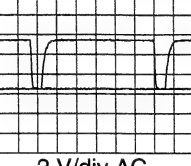
2 V/div AC
5 uS/div

A10 7701-1



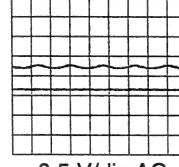
20 V/div AC
5 uS/div

A16 7322-C



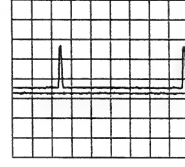
2 V/div AC
5 uS/div

A1 1301-5



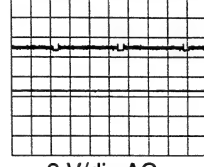
0.5 V/div AC
10 mS/div

A5 7301-8



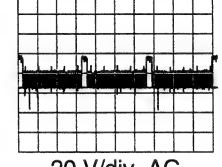
1 V/div AC
5 uS/div

A8 7301-30



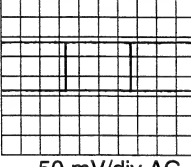
2 V/div AC
5 uS/div

A10 7701-5



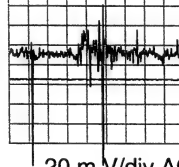
20 V/div AC
5 uS/div

A17 7304-1



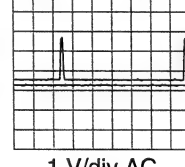
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5 uS/div

A2 7301-1



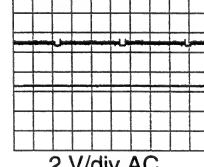
20 m V/div AC
10 uS/div

A5 7301-10



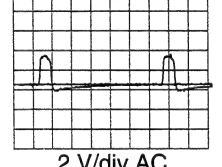
1 V/div AC
5 uS/div

A8 7301-30



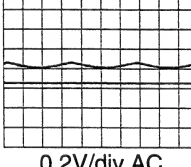
2 V/div AC
5 uS/div

A11 1701-3



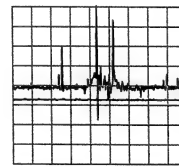
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10 uS/div

A18 7304-2



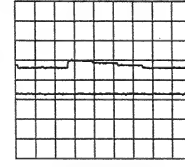
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5 uS/div

A3 7301-2



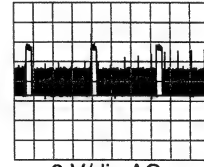
20 m V/div AC
5 uS/div

A6 7301-11



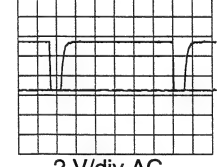
2 V/div AC
5 uS/div

A9 7701-9



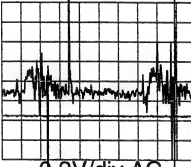
2 V/div AC
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A12 1701-4



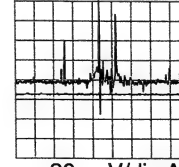
2 V/div AC
10 uS/div

A19 7304-3



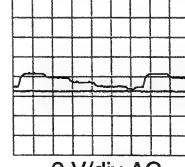
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5 uS/div

A3 7301-3



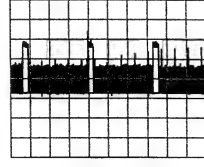
20 m V/div AC
5 uS/div

A7 7301-31



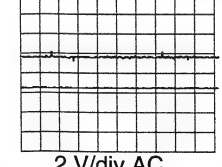
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5 uS/div

A9 7701-11



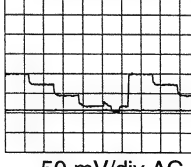
2 V/div AC
5 uS/div

A13 7321-B



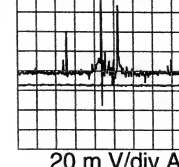
2 V/div AC
0.2 mS/div

A20 7304-12



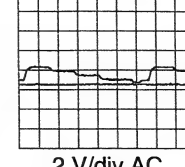
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5 uS/div

A3 7301-4



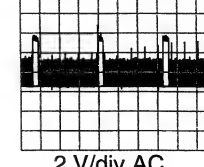
20 m V/div AC
5 uS/div

A7 7301-26



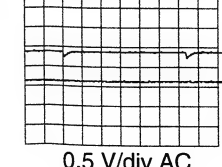
2 V/div AC
5 uS/div

A9 7701-8



2 V/div AC
5 uS/div

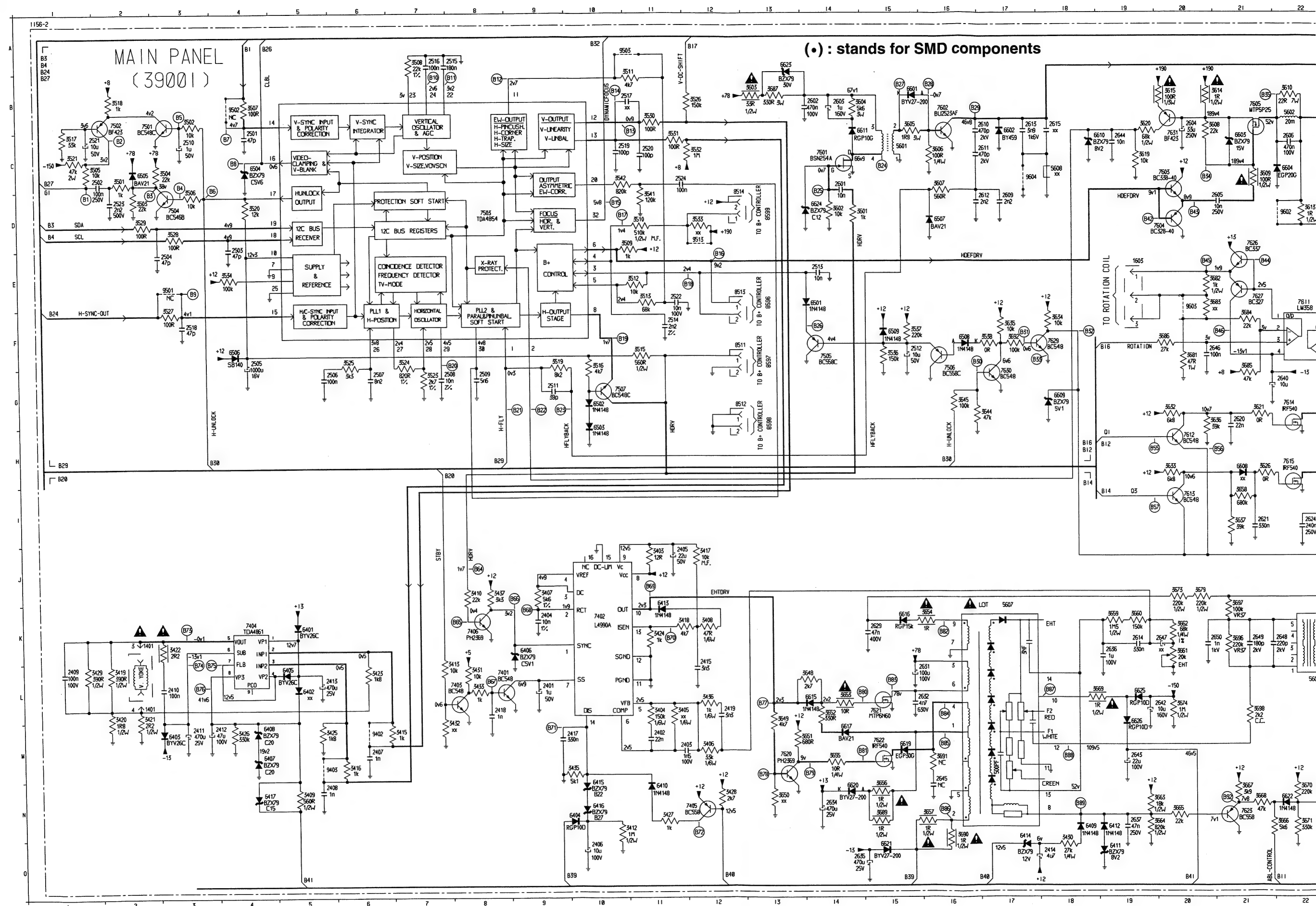
A14 7321-C



0.5 V/div AC
10 uS/div

Deflection Schematic Diagram

B



(s) : stands for SMD components

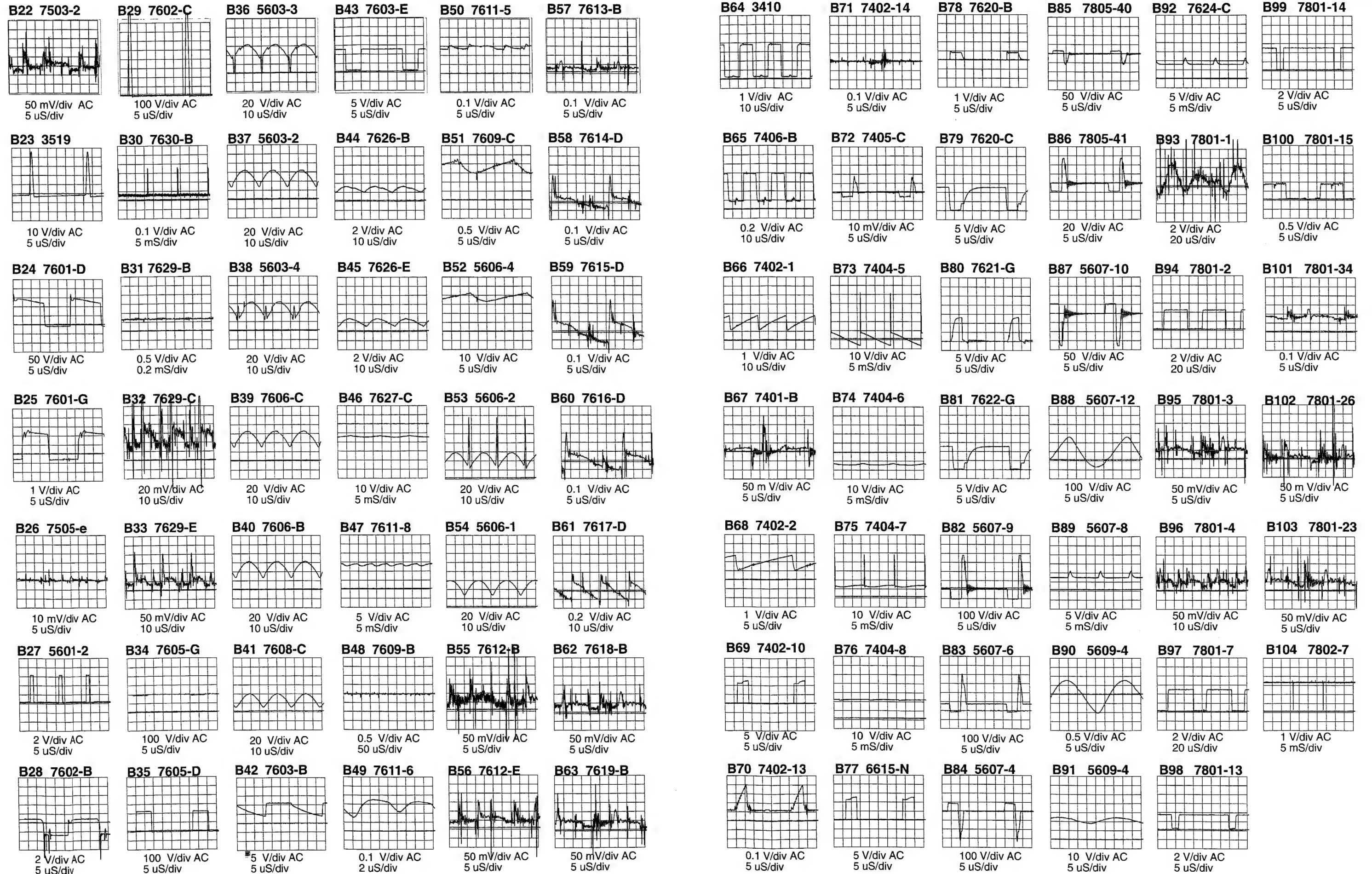
Waveforms for Diagram B and D



Waveforms for Diagram B and D

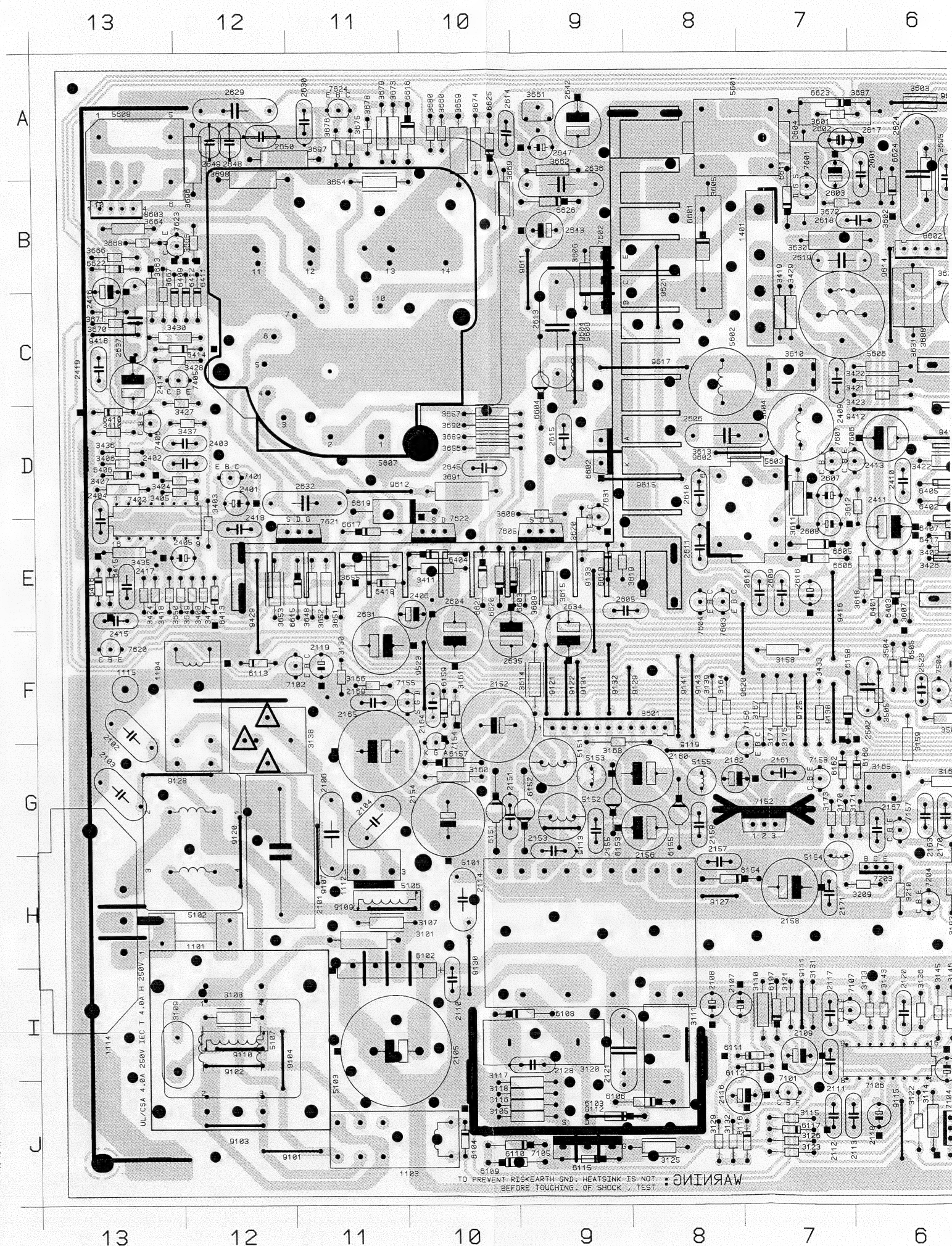
17B CM2300

17

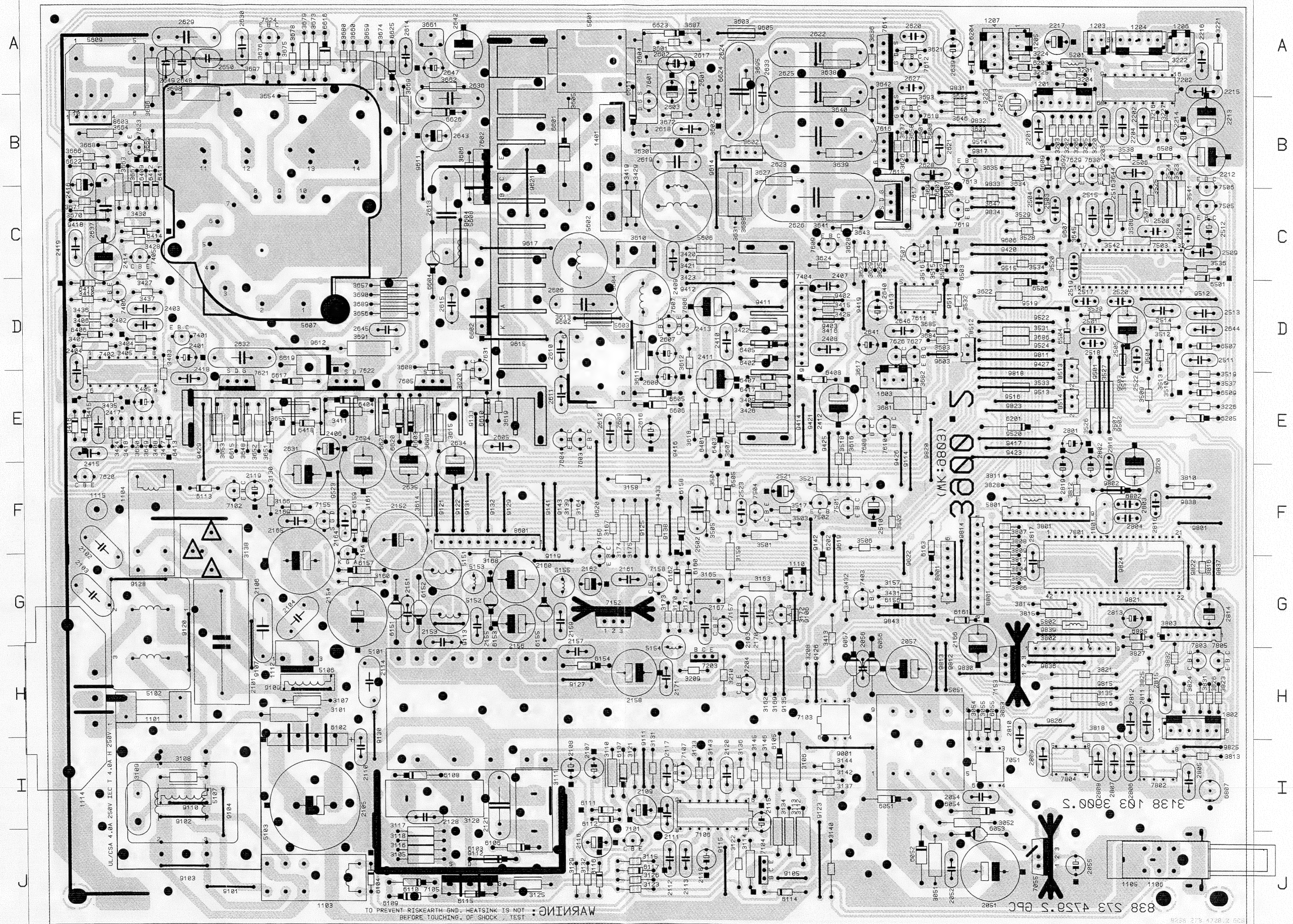


Main Panel C.B.A. (B,C,D,I)

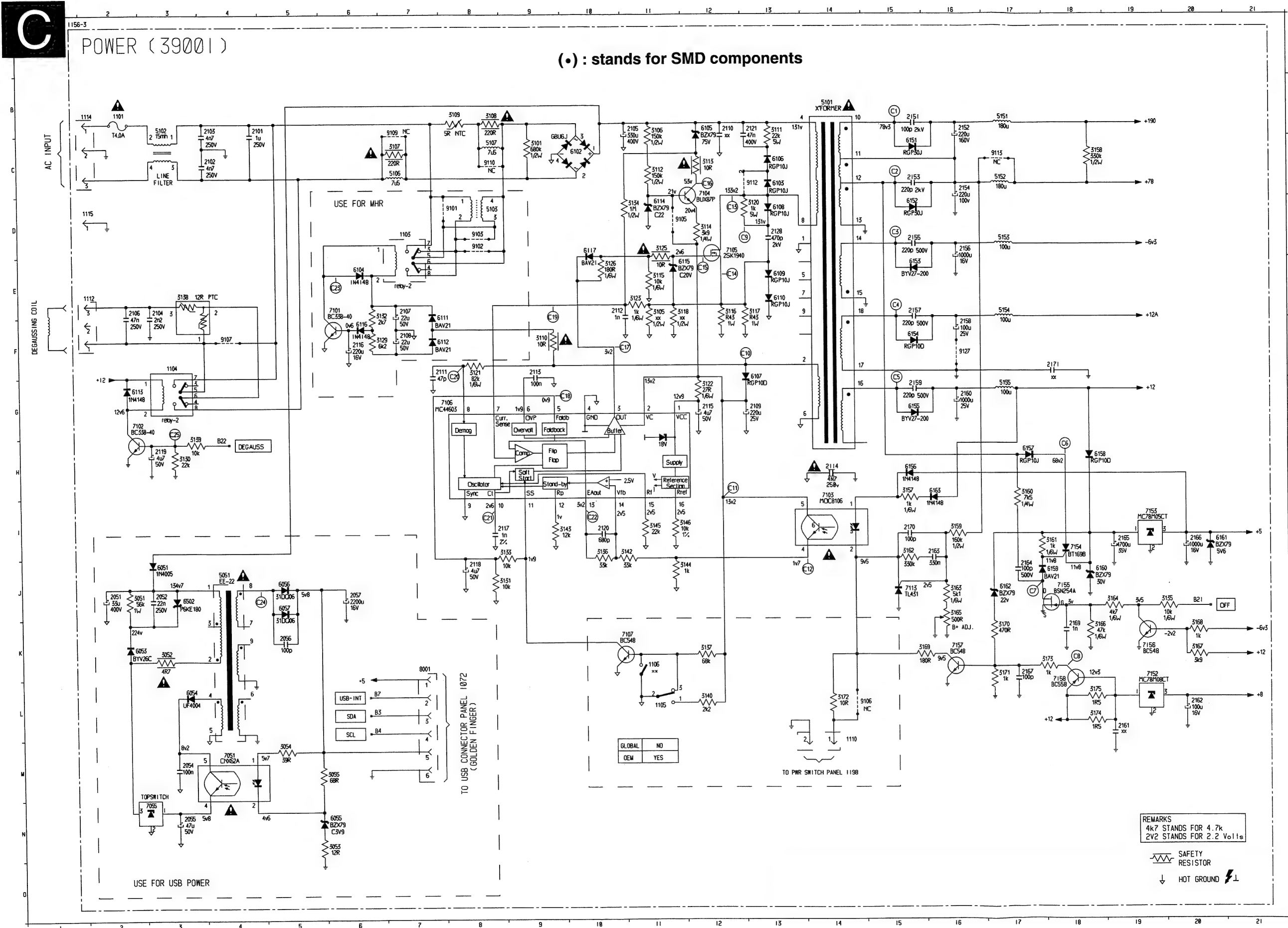
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9816	H	2	7629	B	2	6486	D	13	3688	B	6	3520	D	2	3125	J	8	2512	C	1	1104	F	12
9817	B	3	7630	B	2	6487	E	6	3689	D	9	3521	F	5	3126	J	7	2513	D	1	1105	J	2
9818	E	2	7631	D	9	6488	E	5	3690	D	9	3523	B	1	3129	J	8	2514	D	1	1106	J	2
9820	F	4	7801	F	2	6489	C	13	3691	D	10	3524	C	1	3130	F	11	2515	C	2	1110	G	5
9821	G	1	7802	I	1	6418	D	13	3692	B	2	3525	B	1	3131	I	7	2516	C	2	1112	H	11
9822	F	1	7803	H	1	6411	C	12	3693	B	4	3526	D	2	3132	J	8	2517	D	2	1114	H	13
9823	E	2	7804	I	2	6412	C	12	3694	C	4	3527	E	2	3133	I	6	2518	D	2	1115	F	13
9824	C	2	7805	H	1	6413	C	12	3695	B	6	3528	C	3	3134	J	5	2519	C	2	1201	B	3
9825	I	1	8001	G	4	6414	C	13	3696	B	12	3529	C	3	3135	H	2	2520	D	2	1203	A	2
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9832	B	3	8601	F	8	6418	E	10	3802	H	3	3533	E	2	3139	F	8	2524	C	1	1207	A	3
9833	C	3	8602	B	6	6501	C	1	3803	G	1	3534	C	3	3140	J	5	2601	A	6	1401	B	7
9834	C	3	8603	B	13	6502	C	4	3804	G	3	3536	C	1	3142	I	5	2602	A	7	1603	E	4
9836	H	2	8801	F	3	6503	C	4	3805	G	3	3537	E	1	3143	I	6	2603	B	7	1801	F	2
9837	G	1	8901	I	4	6504	D	2	3806	G	3	3538	B	2	3144	I	5	2604	E	10	1802	H	1
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			9126	H	5	6620	E	10	3832	H	1	3619	E	9	3175	F	7	2625	A	5	2115	J	9
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			9515	C	3	7503	D	1	3110	J	10	3657	D										



3122 J	2510 F	1101 H
3123 J	2511 D	1103 J
3125 J	2512 C	1104 F
3126 J	2513 D	1105 J
3129 J	2514 D	1106 J
3130 F	2515 C	1110 G
3131 I	2516 C	1112 H
3132 J	2517 D	1114 H
3133 I	2518 D	1115 F
3134 J	2519 C	1201 B
3135 H	2520 D	1203 A
3136 I	2521 F	1204 A
3137 I	2522 D	1205 A
3138 F	2523 F	1206 A
3139 F	2524 C	1207 A
3140 J	2525 A	1401 B
3142 I	2526 A	1403 E
3143 I	2527 B	1401 F
3144 I	2528 A	1402 H
3145 I	2529 E	1403 J
3146 I	2530 D	1402 J
3157 G	2531 D	1403 J
3158 F	2532 E	1404 I
3159 G	2533 E	1405 H
3160 G	2534 D	1406 H
3161 F	2535 E	1407 G
3162 H	2536 E	1408 F
3163 G	2537 C	1409 G
3164 F	2538 A	1410 G
3165 G	2539 D	1411 I
3166 F	2540 E	1412 H
3167 F	2541 A	1413 I
3168 G	2542 B	1414 I
3169 H	2543 B	1415 I
3170 G	2544 A	1416 I
3171 G	2545 A	1417 I
3172 G	2546 A	1418 J
3173 G	2547 A	1419 J
3174 F	2548 A	1420 H
3175 F	2549 A	1421 J
3201 A	2550 C	1422 J
3202 B	2551 A	1423 I
3203 B	2552 A	1424 I
3204 A	2553 A	1425 I
3205 B	2554 A	1426 I
3206 B	2555 A	1427 I
3208 H	2556 D	1428 I
3209 H	2557 B	1429 I
3210 H	2558 A	1430 I
3216 B	2559 I	1431 G
3220 B	2560 G	1432 G
3221 A	2561 C	1433 G
3222 A	2562 A	1434 G
3223 A	2563 D	1435 H
3224 A	2564 D	1436 H
3225 A	2565 A	1437 H
3226 E	2566 B	1438 G
3227 B	2567 D	1439 G
3403 D	2568 D	1440 G
3404 D	2569 D	1441 G
3405 D	2570 A	1442 F
3406 D	2571 A	1443 G
3407 D	2572 A	1444 G
3408 E	2573 A	1445 G
3409 E	2574 E	1446 F
3410 D	2575 F	1447 G
3411 E	2576 F	1448 H
3413 G	2577 A	1449 B
3415 D	2578 I	1450 B
3416 D	2579 I	1451 B
3417 E	2580 I	1452 B
3418 E	2581 I	1453 B
3419 E	2582 I	1454 B
3420 C	2583 H	1455 A
3421 C	2584 H	1456 A
3422 C	2585 H	1457 A
3423 C	2586 H	1458 A
3424 E	2587 H	1459 A
3425 D	2588 H	1460 D
3426 E	2589 F	1461 D
3427 C	2590 F	1462 D
3428 C	2591 F	1463 D
3429 C	2592 F	1464 E
3430 C	2593 F	1465 E
3431 G	2594 J	1466 D
3432 G	2595 J	1467 D
3433 G	2596 J	1468 D
3434 E	2597 I	1469 D
3435 E	2598 I	1470 D
3436 D	2599 I	1471 E
3437 D	2600 H	1472 E
3501 F	2601 J	1473 D
3502 F	2602 J	1474 C
3503 F	2603 H	1475 E
3504 F	2604 I	1476 B
3505 F	2605 I	1477 E
3506 F	2606 I	1478 E
3507 D	2607 I	1479 C
3508 C	2608 I	1480 D
3509 E	2609 J	1481 D
3510 D	2610 J	1482 C
3511 E	2611 J	1483 C
3512 D	2612 J	1484 C
3513 D	2613 J	1485 B
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3515 C	2615 I	1487 C
3516 C	2616 I	1488 C
3517 F	2617 I	1489 C

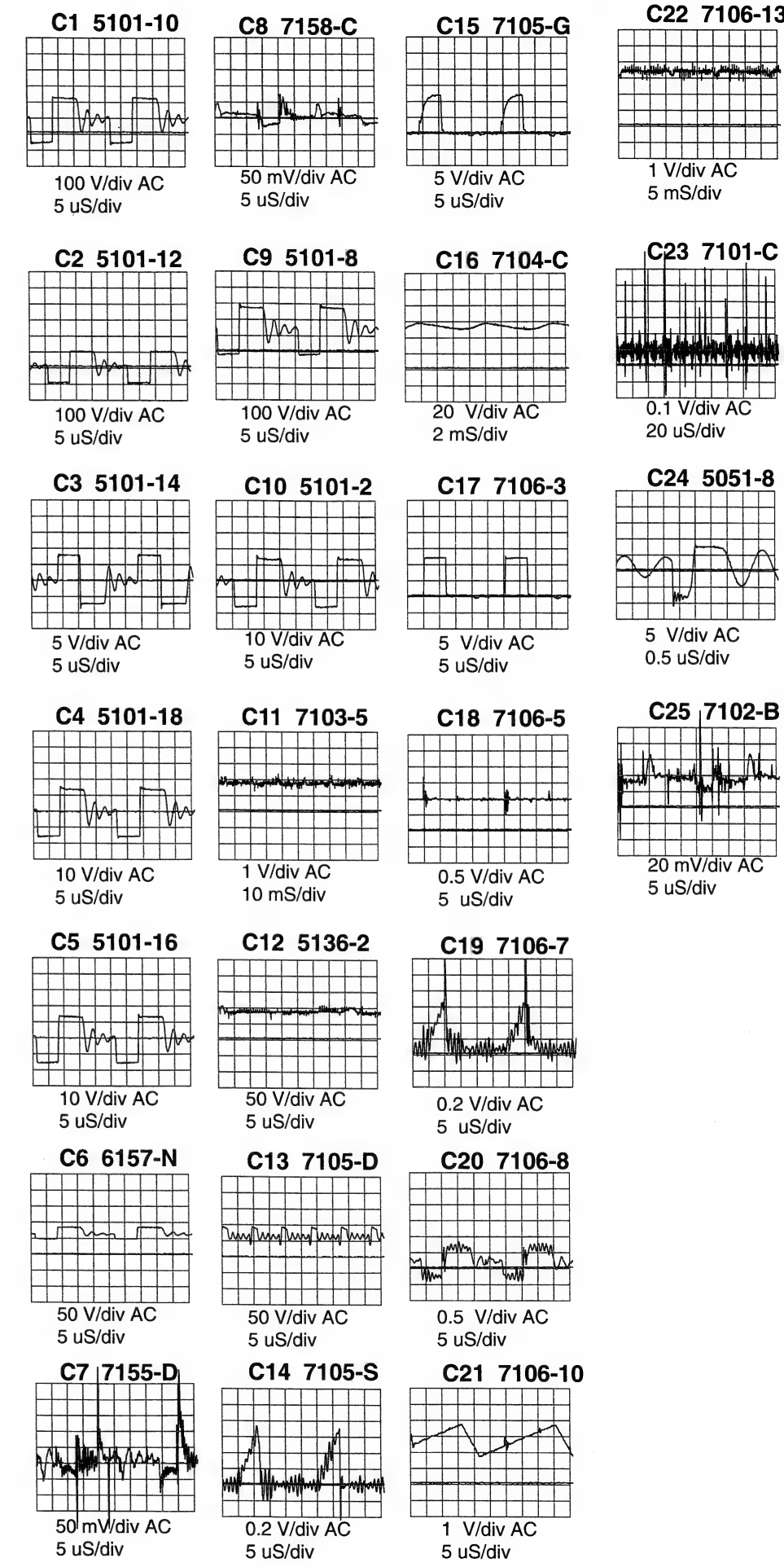
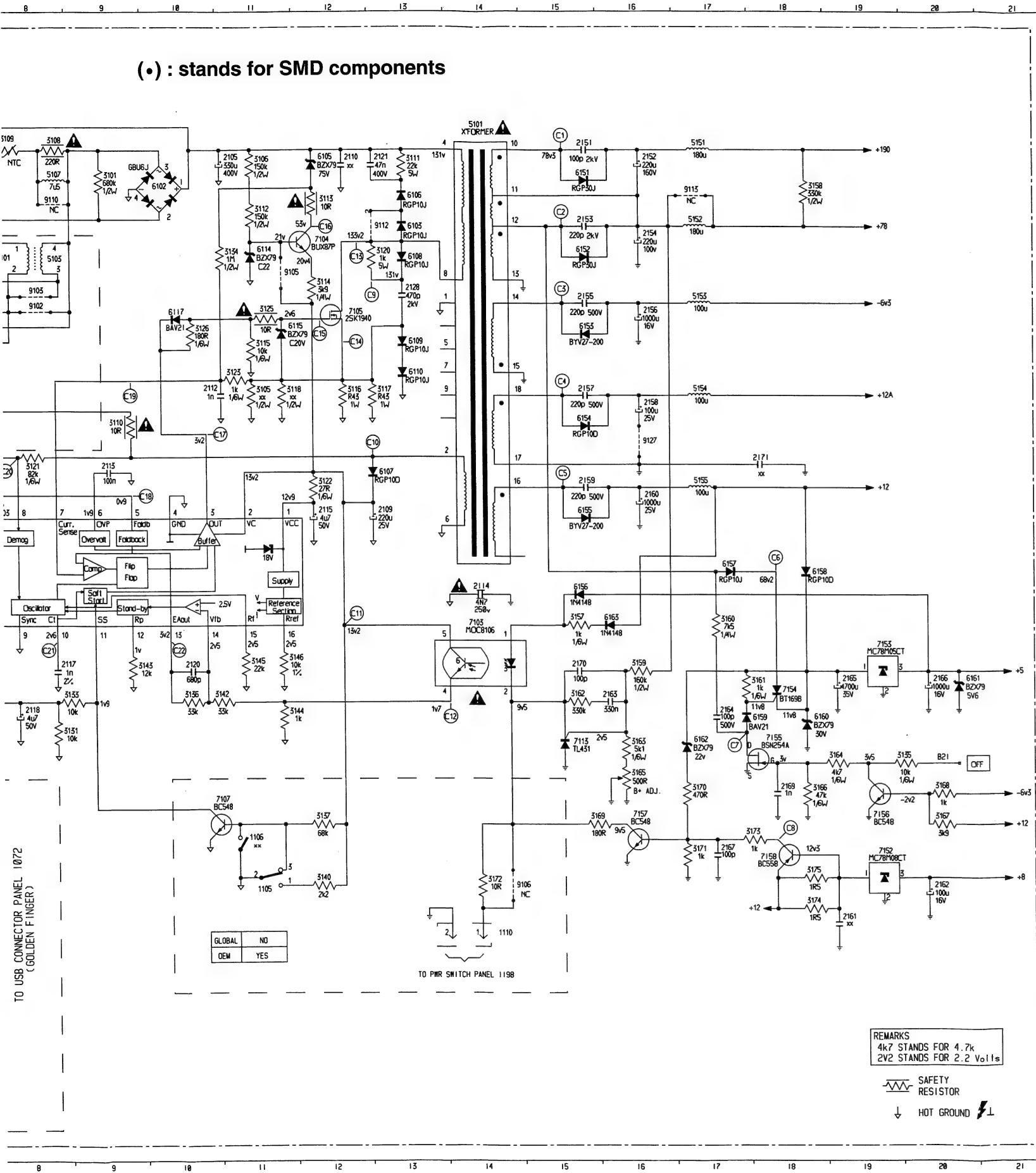


Power Supply Schematic Diagram



Power Supply Schematic Diagram

Waveforms for Diagram C



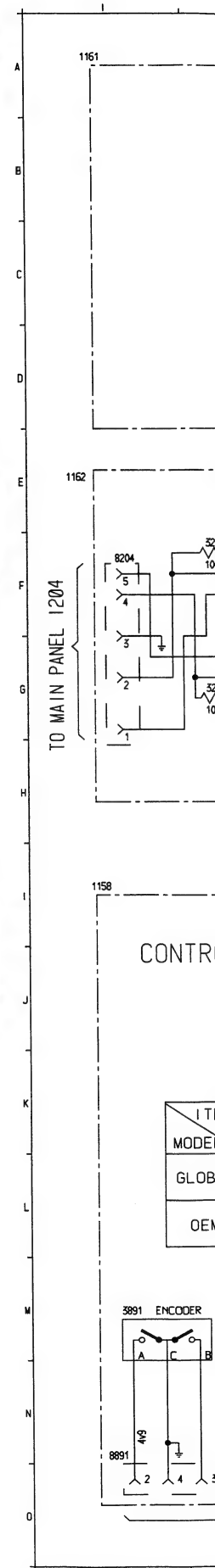
U-Control Schematic Diagram

Earphone, Con'

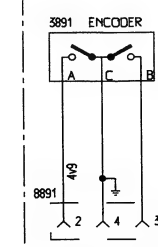


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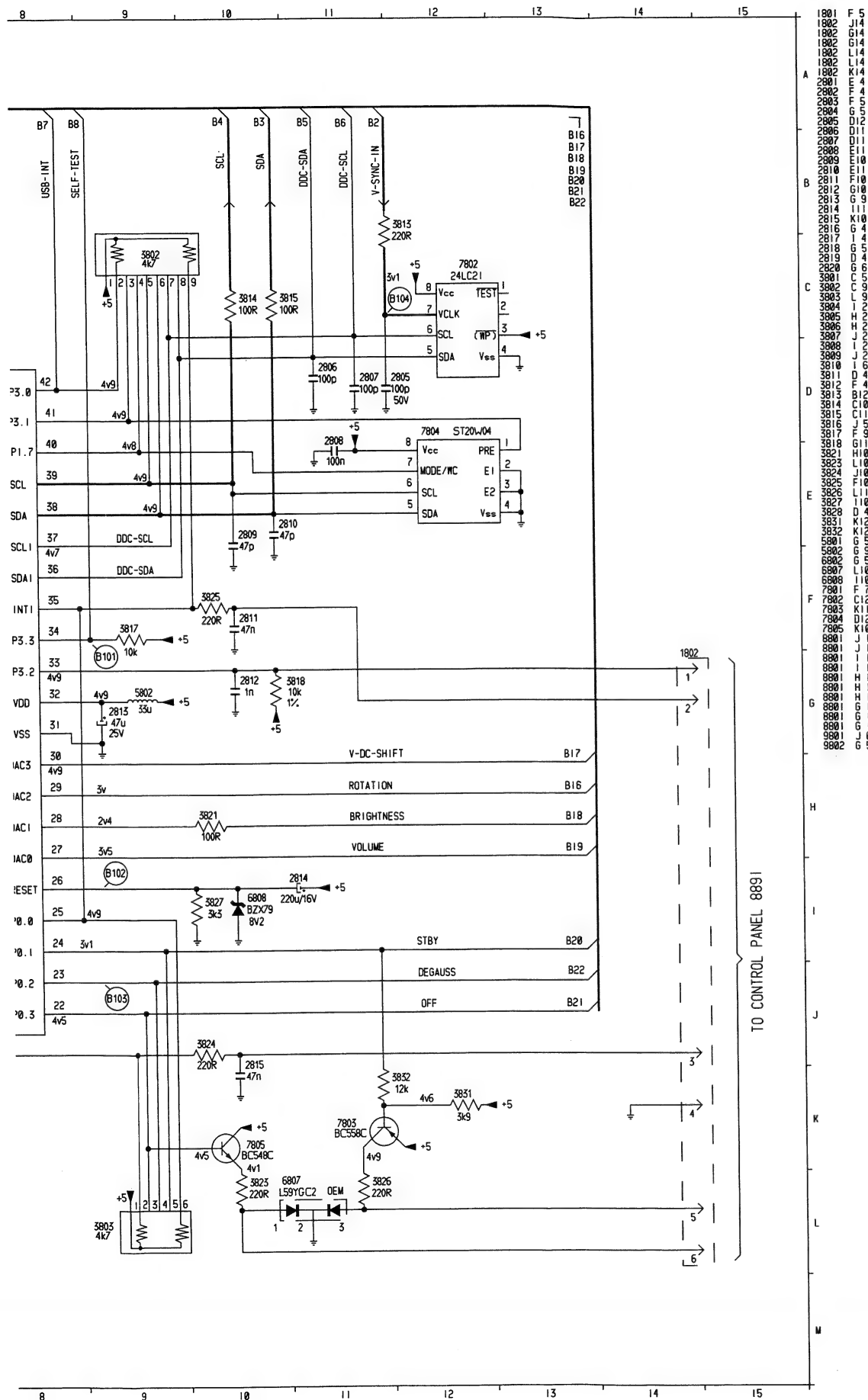
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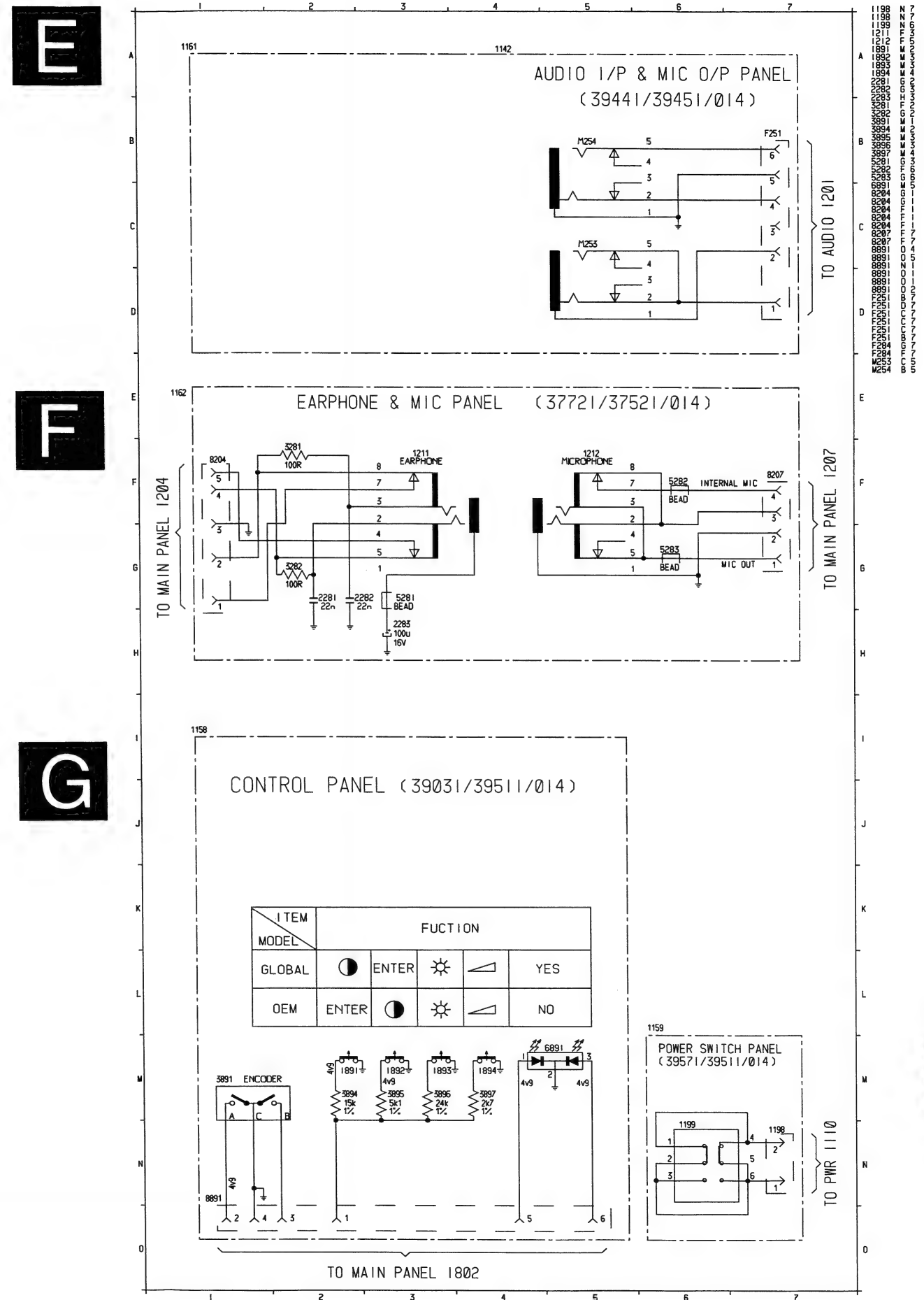
ITEM	
MODEL	
GLOBAL	
OEM	



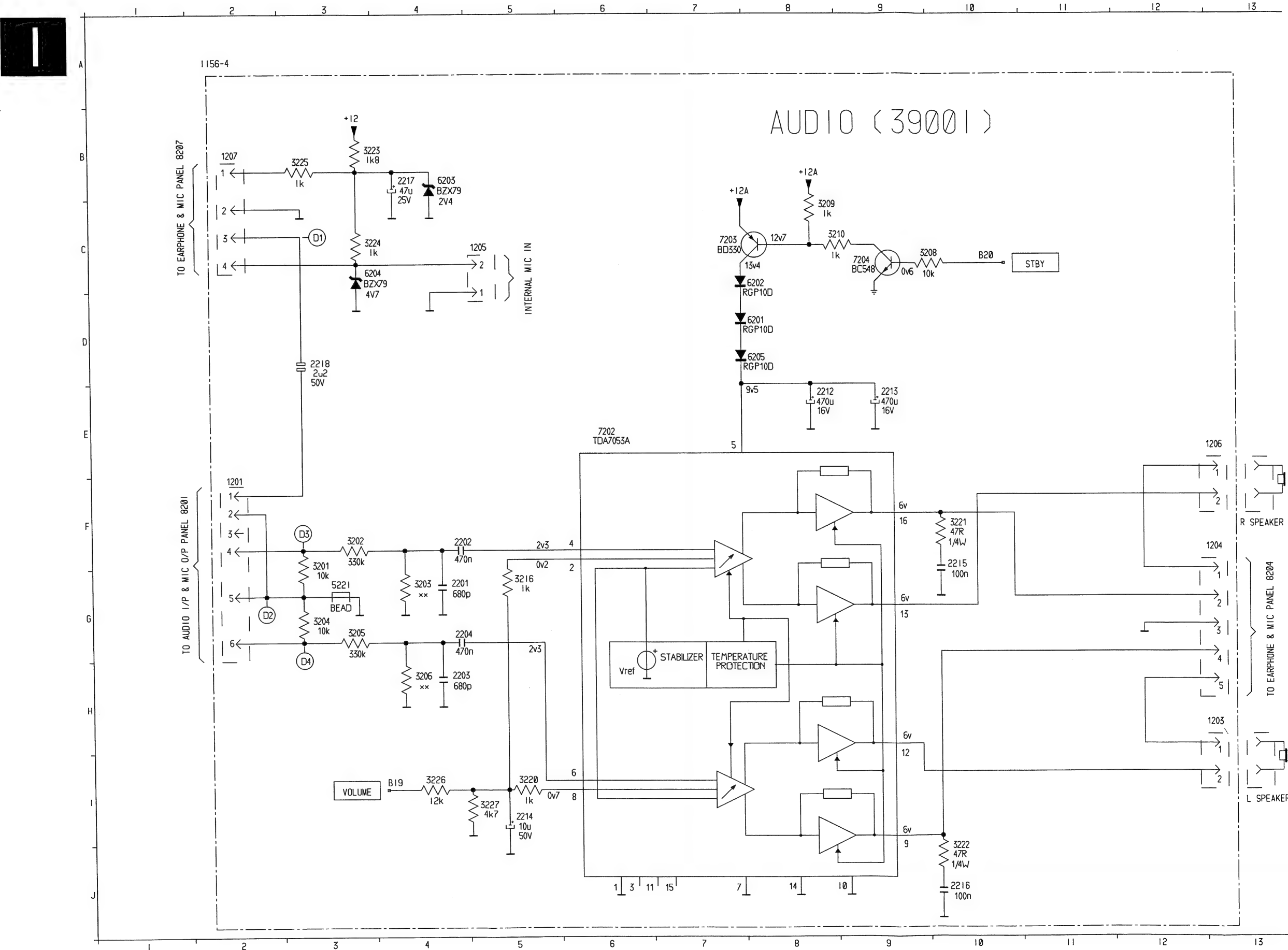
Schematic Diagram



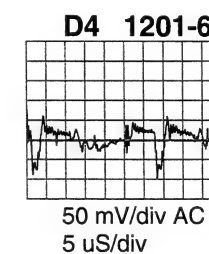
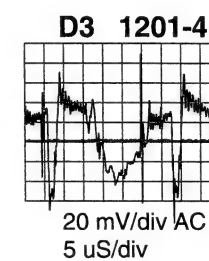
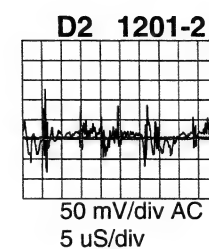
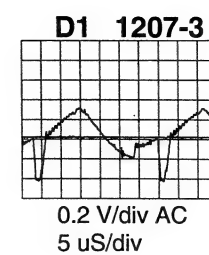
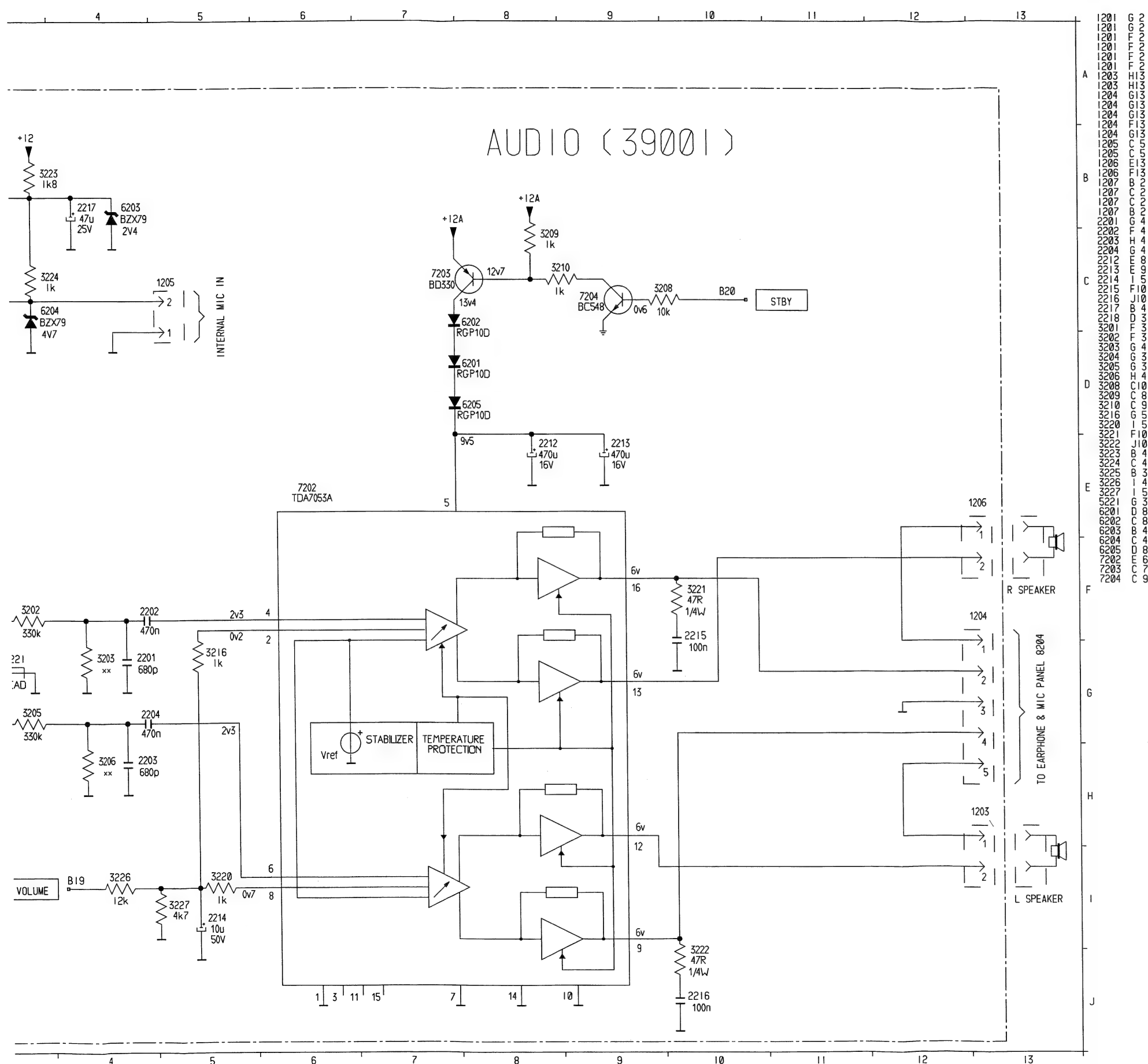
Earphone, Control and Power Switch Schematic Diagram



Audio Schematic Diagram



Audio Schematic Diagram



Warning

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the unit via a wrist wrap with resistance. Keep components and tools also at the same potential.

1. Servicing of SMDs (Surface Mounted Devices)**1.1 General cautions on handling and storage**

- Oxidation on the terminals of SMDs results in poor soldering. Do not handle SMDs with bare hands.
- Avoid using storage places that are sensitive to oxidation such as places with sulphur or chlorine gas, direct sunlight, high temperatures or a high degree of humidity. The capacitance or resistance value of the SMDs may be affected by this.
- Rough handling of circuit boards containing SMDs may cause damage to the components as well as the circuit boards. Circuit boards containing SMDs should never be bent or flexed. Different circuit board materials expand and contract at different rates when heated or cooled and the components and/or solder connections may be damaged due to the stress. Never rub or scrape chip components as this may cause the value of the component to change. Similarly, do not slide the circuit board across any surface.

1.2 Removal of SMDs

- Heat the solder (for 2-3 seconds) at each terminal of the chip. By using a solder wick and a slight horizontal force, small components can be removed with the soldering iron. They can also be removed with a solder sucker (see Fig. 4.1A)

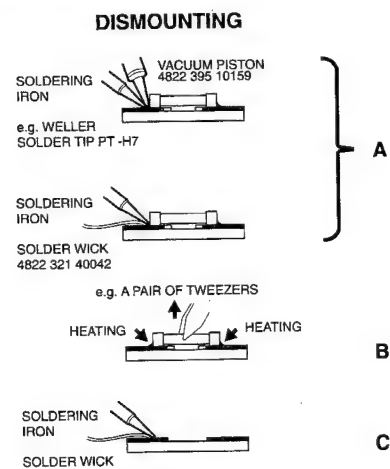


Fig. 4.1

- While holding the SMD with a pair of tweezers, take it off gently using the soldering iron's heat applied to each terminal (see Fig. 4.1 B).
- Remove the excess solder on the solder lands by means of a solder wick or a solder sucker (see Fig. 4.1C).

1.3 Caution on removal

- When handling the soldering iron, use suitable pressure and be careful.
- When removing the chip, do not use undue force with the pair of tweezers.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).
- The chip, once removed, must never be reused.

1.4 Attachment of SMDs

- Locate the SMD on the solder lands by means of tweezers and solder the component on one side. Ensure that the component is positioned correctly on the solder lands (see Fig. 4.2A).
- Next complete the soldering of the terminals of the component (see Fig. 4.2B).

MOUNTING

e.g. A PAIR OF TWEEZERS

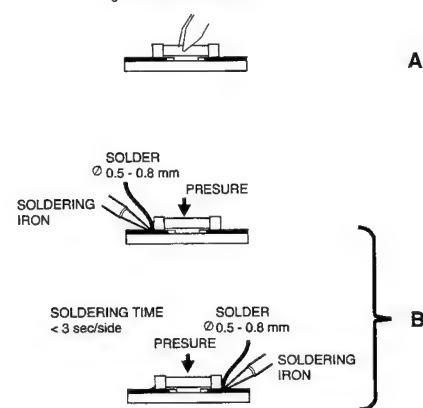


Fig. 4.2

2. Caution when attaching SMDs

- When soldering the SMD terminals, do not touch them directly with the soldering iron. The soldering should be done as quickly as possible, care must be taken to avoid damage to the terminals of the SMDs themselves.
- Keep the SMD's body in contact with the printed board when soldering.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).
- Soldering should not be done outside the solder land.
- Soldering flux (of rosin) may be used, but should not be acidic.
- After soldering, let the SMD cool down gradually at room temperature.
- The quantity of solder must be proportional to the size of the solder land. If the quantity is too great, the SMD might crack or the solder lands might be torn loose from the printed board (see Fig. 4.3).

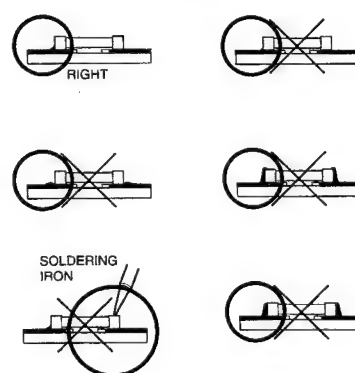
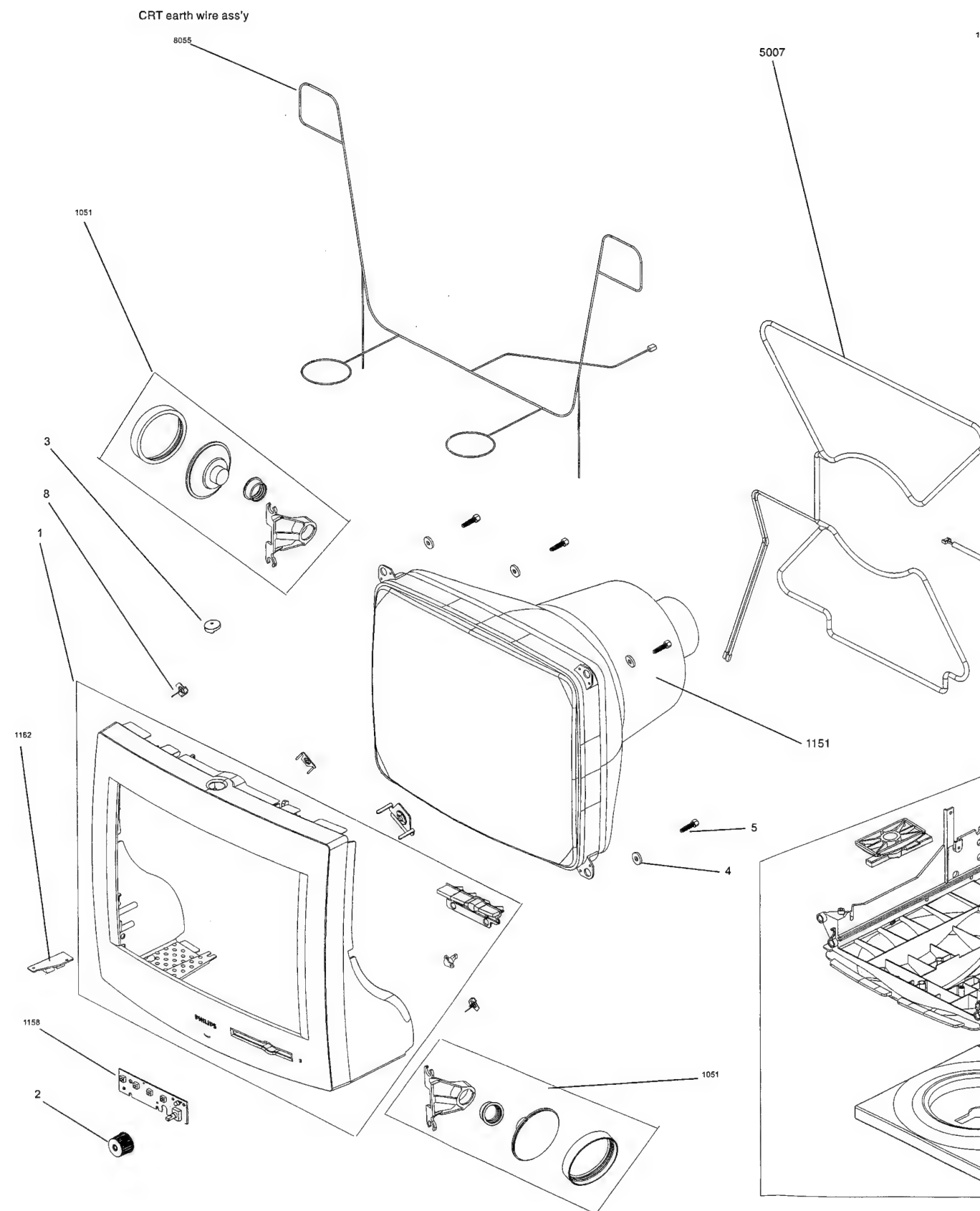
EXAMPLES

Fig. 4.3



Exploded View

means of tweezers and
sure that the component is
s (see Fig. 4.2A).
inals of the component

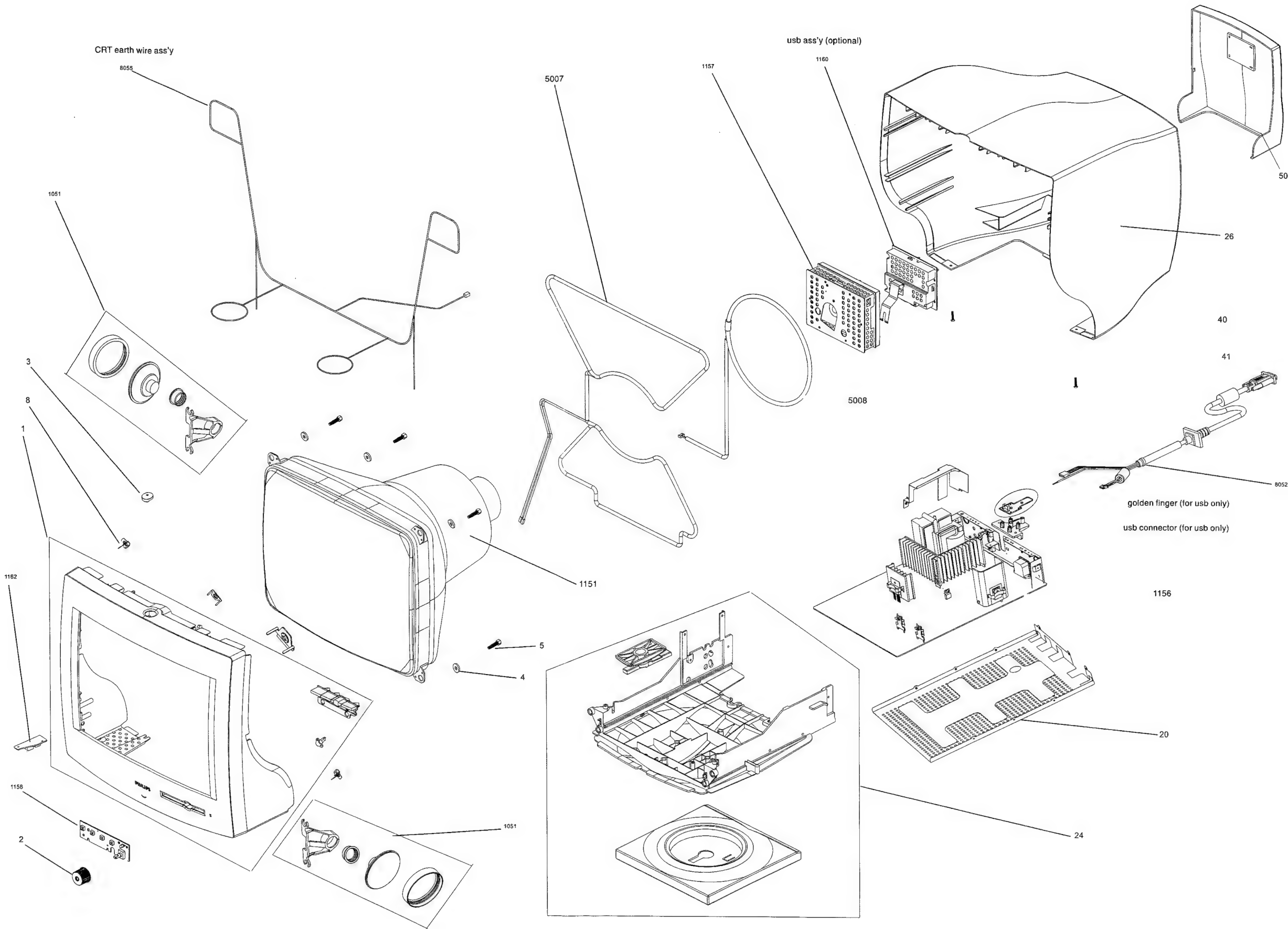
A
B
a

not touch them directly with
d be done as quickly as
damage to the terminals of the
re printed board when
30 W) should preferably be
ring temperature: 225 to

he solder land.
out should not be acidic.
gradually at room

ional to the size of the solder
/D might crack or the solder
ted board (see Fig. 4.3).

□
□
J



**Parts indicated on exploded view:
Model: 17B2302Q/00C**

1	3138 107 95060	FRONT CABINET ASSY
	3138 104 39080	LENS
	3138 104 39070	KNOB-FUNCTION LOCKER
2	3138 104 37910	ROTARY KNOB
3	3138 104 41840	POWER KNOB
4	3138 101 63950	CRT MOUNTING WASHER
5	3138 100 41180	TAP TITE SCREW W/WASHER
8	3138 101 64480	CRT PLATE
24	3138 107 95100	BOTTOM PLATE ASSY
	3138 104 39050	BOTTOM PLATE SLIDER
	3138 104 38270	
	3138 104 39140	BASE
26	3138 104 39040	BACK COVER
50	3138 104 39060	BACK DOOR
1051	3138 128 64430	SPEAKER+WIRE ASSY
1151▲	4822 131 11288	M41KXH107X02(B)
1156	3138 128 63460	MAIN PCB ASSY
1157	3138 128 62900	VIDEO PCB ASSY
1158	3138 128 63470	KEY CONTROL PCB ASSY
1159	3138 128 63130	DC SWITCH PCB ASSY
1162	3138 128 62950	EARPHONE PCB ASSY
5007▲	3138 178 71350	DEGAUSSING COIL
5008	4822 157 10652	ROTATION COIL
8052	3138 178 71590	I/F CABLE

Various

	3138 106 51540	CARTON
	3138 106 51550	CUSHION LEFT
	3138 106 51560	CUSHION RIGHT
	3138 106 51570	CUSHION
	4822 701 14248	POT BAG (for SET)
	4822 701 20292	TAPPING SCREW WITH WASHER
	3138 105 35350	D.F.U
	4822 600 10409	P.E. BAG (for D.F.U.)
	3138 105 34910	EUR. WARRANTY BOOKLET
	3138 104 39100	CAP-SPEAKER
	4822 701 14688	RUBBER SUPPORT-SPEAKER
	3138 104 39110	HOLDER
	3138 104 39090	SPEAKER
	3138 104 39090	HORN-SPEAKER
5001	4822 240 10266	LOUD SPEAKER (25R-1W)
5002	4822 240 10266	LOUD SPEAKER (25R-1W)
1150	4822 242 30337	MICRO PHONE (WM-55A103)

Accessories

▲	4822 321 11194	MAINS CORD
	3138 178 72040	AUDIO I/P CABLE
	3138 178 72050	MICROPHONE CABLE
	3138 117 01010	WIN 95 VERSION:2.0

1156 Main Panel**Various**

1156	3138 128 63460	MAIN PCB ASSY
	4822 492 71337	SPRING (FUSE HOLDER)
	5322 390 20011	VET SILIC.P4 20GR
1101▲	4822 070 34002	FUSE,218004,(4A)
1104▲	4822 280 70378	RELAY 2P 12V/60MA
		OMI-SS212 B
1110	4822 265 10286	2P

1112	4822 265 30891	2 P.
1201	4822 265 41422	6P
1203	4822 265 10286	2P
1204	4822 265 31207	5P
1205	4822 265 10286	2P
1206	4822 265 20692	2P MALE
1207	4822 265 31206	4P
1114	3138 178 71880	AC INLET ASSY

	4822 492 62076	FOR TRANSISTORS
	5322 390 20011	VET SILIC.P4 20GR
	4822 701 20292	TAPPING SCREW WITH WASHER



1258	3138 128 64480	EEPROM ASS'Y
1603	4822 265 31231	3 P MALE
1801	4822 242 10836	RES XTL 12MHz 30P
1802	4822 265 41422	6P



2101	5322 121 44212	1µF 10% 275B
2102	4822 126 14084	4.7nF 20% 250V
2103	4822 126 14084	4.7nF 20% 250V
2104	4822 121 10661	2.2nF 20% 400V
2105	4822 124 42168	330µF 400V
2106	4822 121 70556	47nF 20% 250V
2109	4822 124 42149	220µF 20% 25V
2111	4822 126 12726	47pF 5% 50V
2112	5322 122 32331	1nF 10% 100V
2113	4822 121 43696	100nF 100V

2114▲	4822 126 14084	4.7nF 20% 250V
2115	4822 124 40246	4.7µF 20% 63V
2117	4822 121 10635	1nF 2% 100V
2118	4822 124 40246	4.7µF 20% 63V
2119	4822 124 40246	4.7µF 20% 63V
2120	5322 122 32052	680pF 10% 100V
2121	4822 121 43516	47nF 400V
2128	4822 126 14275	470pF 2KV
2151	4822 126 10783	100pF 5% 2KV
2152	4822 124 11863	220U 20% 160V

2153	4822 126 14269	220pF 10% 2KV
2154	4822 124 80538	220µF 20% 100V
2155	4822 122 33645	220pF 500V
2156	4822 124 40201	1000µF 20% 16V
2157	4822 122 33645	220pF 500V
2158	4822 124 40207	100µF 20% 25V
2159	4822 122 33645	220pF 500V
2160	4822 124 42339	100µF 25V
2162	4822 124 22678	100µF 20% 16V
2163	4822 121 43697	330nF 10% 100V

2164	4822 122 32899	100pF 10%B 500V
2165	4822 124 11896	4700µF 20% 35V
2166	4822 124 42172	1000µF 16V
2167	4822 126 11099	100pF 5% 50V
2169	5322 122 32331	1nF 10% 100V
2170	4822 126 11099	100pF 5% 50V
2201	5322 122 32052	680pF 10% 100V
2202	4822 121 43913	470nF 10% 100V
2203	5322 122 32052	680pF 10% 100V
2204	4822 121 43913	470nF 10% 100V

2212	4822 124 40198	470µF 20% 16V
2213	4822 124 40198	470µF 20% 16V
2214	4822 124 23539	10µF 20% 50V
2215	4822 121 43696	100nF 100V
2216	4822 121 43696	100nF 100V
2217	4822 124 80132	47µF 20% 25V
2218	4822 124 11613	2.2µF 20% 50V
2401	4822 124 22669	1µF 20% 50V
2402	4822 126 10757	22nF 20% 50V
2403	4822 121 70547	1.5nF 5% 100V

2404	4822 121 70162	10nF 5% 400V
2405	4822 124 40804	22µF 20% 63V
2406	5322 124 40641	10µF 20% 100V
2407	5322 122 32331	1nF 10% 100V
2408	5322 122 32331	1nF 10% 100V
2409	4822 121 43696	100nF 100V
2410	4822 126 14213	100nF 10% 100V
2411	4822 124 42169	470µF 25V
2412	4822 124 42359	47µF 100V
2413	4822 124 42169	470µF 25V

2414	4822 124 11937	4.7µF 20% 50V
2415	4822 121 70452	3.3nF 5% 100V
2416	4822 124 22669	1µF 20% 50V
2417	4822 121 43697	330nF 10% 100V
2418	5322 122 32331	1nF 10% 100V
2419	4822 126 10453	50V
2501	4822 126 12726	47pF 5% 50V
2502	4822 121 70073	100nF 10% 250V

2503	4822 126 12726	47pF 5% 50V
2504	4822 126 12726	47pF 5% 50V

2505	4822 124 42172	1000µF 16V
2506	4822 121 43696	100nF 100V
2507	4822 121 43696	8.2nF 5% 250V
2508	4822 121 70162	10nF 5% 400V
2509	4822 121 10576	5.6nF 2% 100V
2510	4822 124 22669	1µF 20% 50V
2511	4822 122 31069	39pF 2% 100V
2512	4822 124 23539	10µF 20% 50V
2513	4822 121 43693	10nF 100V
2514	4822 121 10732	0.0022G 100VT

2515	4822 121 10574	180nF 10% 100V
2516	4822 121 43696	100nF 100V
2518	4822 126 12726	47pF 5% 50V
2519	4822 126 11099	100pF 5% 50V
2520	4822 126 11099	100pF 5% 50V
2521	4822 124 23539	10µF 20% 50V
2522	4822 121 43693	10nF 100V
2523	4822 126 10206	2.2nF 10% 500V
2601	4822 121 43693	10nF 100V
2602	4822 124 12142	0.47µF 10% 100V

2603	4822 124 42162	1µF 160V
2604	4822 124 42161	33µF 20% 250V
2605	4822 121 10504	250V 10N 5%
2606	4822 121 10733	470nF 100V
2607	4822 124 23539	10µF 20% 50V
2608	4822 124 23539	10µF 20% 50V
2609	4822 121 70439	2.2nF 5% 100V
2610	4822 126 14275	470pF 2KV
2611	4822 126 14275	470pF 2KV
2612	4822 121 70439	2.2nF 5% 100V

2613	4822 121 70147	3.9nF 5% 1.6KV
2614	4822 121 43697	330nF 10% 100V
2616	4822 124 23539	10µF 20% 50V
2618	4822 121 43696	100nF 100V
2619	4822 126 13824	400V 4N7 5%
2620	4822 126 10757	22nF 20% 50V
2621	4822 121 43697	330nF 10% 100V
2622	4822 121 70241	120nF 5% 250V
2623	4822 121 70572	390nF 5% 250V
2624	4822 121 10734	240nF 5% 250V

2625	4822 121 70412	270nF 5% 250V
2626	4822 121 10735	910nF 5% 250V
2627	4822 126 10757	22nF 20% 50V
2628	4822 126 10757	22nF 20% 50V
2629	4822 121 43516	47nF 400V
2630	4822 122 33646	470pF 10% 500V
2631	4822 124 40755	100µF 20% 100V
2632	4822 121 40337	4.7nF 10% 630V
2634	4822 124 42144	470µF 63V
2635	4822 124 42144	470µF 63V

2636	4822 121 70301	1µF 100V
2637	4822 121 40336	47nF 10% 250V
2639	4822 124 40246	4.7µF 20% 63V
2640	4822 124 23539	10µF 20% 50V
2641	4822 124 23539	10µF 20% 50V
2642	4822 124 22499	10µF 160V
2643	4822 124 40764	22µF 100 V
2644	4822 126 11103	10nF 5% 50V
2646	4822 121 43696	100nF 100V
2648	4822 126 13035	220pF 10% 2KV

2649	4822 126 14318	180pF 10% 2KV
2650	4822 126 13134	1nF 10% 1KV
2801	4822 124 12072	2.2µF 20% 50V
2802	4822 124 40763	2.2µF 100 V
2803	5322 122 32072	33pF 2% 100V
2804	5322 122 32072	33pF 2% 100V
2805	4822 126 11099	100pF 5% 50V
2806	4822 126 11099	100pF 5% 50V
2807	4822 126 11099	100pF 5% 50V
2808	4822 121 43696	100nF 100V

2809	4822 126 12726	47pF 5% 50V
2810	4822 126 12726	47pF 5% 50V
2811	4822 121 43695	47nF 10% 100V
2812	5322 122 32331	1nF 10% 100V
2813	4822 124 80132	47µF 20% 25V
2814	4822 124 22666	220µF 20% 16V
2815	4822 121 43695	47nF 10% 100V
2816	4822 126 12726	47pF 5% 50V
2817	4822 126 12726	47pF 5% 50V
2818	4822 121 43696	100nF 100V

2819	4822 124 40763	2.2µF 100 V
2820	4822 124 40198	470µF 20% 16V



3101	4822 053 21684	680k 5% 0.5W
3106	4822 050 21504	150k 1% 0.6W
3107▲	4822 052 10221	220Ω 5% 0.33W
3108▲	4822 052 10221	220Ω 5% 0.33W
3109	4822 116 30469	5Ω 15%
3111	4822 117 11633	22k 5% 5W
3112	4822 050 21504	150k 1% 0.6W

3113▲	4822 052 10109	10Ω 5% 0.33W
3114	4822 050 23902	3k9 1% 0.6W
3115	4822 050 21003	10k 1% 0.6W






3116	4822 117 12364	0Ω43 5% 1W
3117	4822 117 12364	0Ω43 5% 1W
3120	4822 117 12833	1k 5% 5W
3121	4822 116 52202	82Ω 5% 0.5W
3122	4822 050 12709	27Ω 1% 0.4W
3123	4822 050 21002	1k 1% 0.6W
3125▲	4822 052 10109	10Ω 5% 0.33W
3126	4822 050 11801	180Ω 1% 0.4W
3130	4822 050 22203	22k 1% 0.6W
3131	4822 050 21003	10k 1% 0.6W

3133	4822 050 21003	10k 1% 0.6W
3134	4822 050 21005	1M 1% 0

3503	4822 050 22203	22k 1% 0.6W
3504	4822 050 22203	22k 1% 0.6W
3505	4822 050 21003	10k 1% 0.6W
3506	4822 050 21003	10k 1% 0.6W
3507	4822 050 21001	100Ω 1% 0.6W
3508	4822 116 52257	22k 5% 0.5W
3509	4822 050 21002	1k 1% 0.6W
3510	4822 050 25104	510k 1% 0.6W
3511	4822 050 24702	4k7 1% 0.6W
3512	4822 050 21003	10k 1% 0.6W
3513	4822 050 24703	47k 1% 0.6W
3515	4822 050 25601	560Ω 1% 0.6W
3516	4822 050 24702	4k7 1% 0.6W
3517	4822 111 50522	33k 5% 1/6W
3518	4822 050 21002	1k 1% 0.6W
3519	4822 050 28202	8k2 1% 0.6W
3520	4822 050 21203	12k 1% 0.6W
3521	4822 053 11473	47k 5% 2W
3523	4822 050 22702	2k7 1% 0.6W
3524	4822 050 28201	820Ω 1% 0.6W
3525	4822 050 13302	3k3 1% 0.4W
3526	4822 050 11504	150k 1% 0.4W
3527	4822 050 21001	100Ω 1% 0.6W
3528	4822 050 21001	100Ω 1% 0.6W
3529	4822 050 21001	100Ω 1% 0.6W
3530	4822 050 21001	100Ω 1% 0.6W
3531	4822 050 21001	100Ω 1% 0.6W
3532	4822 116 81783	1M 5 5% 0.5W
3534	4822 111 50521	100k 5%
3536	4822 050 11504	150k 1% 0.4W
3537	4822 050 12204	220k 1% 0.4W
3538	4822 117 12993	0Ω01 100% 0.4W
3601	4822 050 21002	1k 1% 0.6W
3602	4822 050 21003	10k 1% 0.6W
3603	4822 052 10339	33Ω 5% 0.33W
3604	4822 117 11605	5k6 5% 3W
3605	4822 117 12321	1Ω 5%
3606	4822 050 21001	100Ω 1% 0.6W
3607	4822 050 25601	560Ω 1% 0.6W
3608	4822 050 22203	22k 1% 0.6W
3609	4822 052 11101	100Ω 5% 0.5W
3610	4822 117 12994	22Ω 5% 7W
3611	4822 052 10108	1Ω 5% 0.33W
3612	4822 050 22203	22k 1% 0.6W
3613	4822 052 10108	1Ω 5% 0.33W
3614	4822 052 11108	1Ω 5% 0.5W
3615	4822 052 10101	100Ω 5% 0.33W
3616	4822 050 21003	10k 1% 0.6W
3617	4822 050 21203	12k 1% 0.6W
3618	4822 050 21004	100k 1% 0.6W
3619	4822 050 21003	10k 1% 0.6W
3620	4822 050 26803	68k 1% 0.6W
3621	4822 117 12993	0Ω01 100% 0.4W
3622	4822 050 21004	100k 1% 0.6W
3624	4822 050 21003	10k 1% 0.6W
3626	4822 117 12993	0Ω01 100% 0.4W
3627	4822 117 12701	15Ω 1% 0.5W
3628	4822 050 22208	22Ω 1% 0.6W
3629	4822 111 50522	33k 5% 1/6W
3630	4822 053 11101	100Ω 5% 2W
3631	4822 053 11271	270Ω 5% 2W
3632	4822 050 16802	6k8 1% 0.4W
3633	4822 050 16802	6k8 1% 0.4W
3634	4822 050 21003	10k 1% 0.6W
3635	4822 050 21003	10k 1% 0.6W
3636	4822 050 13903	39k 1% 0.4W
3637	4822 050 13903	39k 1% 0.4W
3638	4822 050 21504	150k 1% 0.6W
3639	4822 050 21504	150k 1% 0.6W
3640	4822 050 21504	150k 1% 0.6W
3641	4822 050 21504	150k 1% 0.6W
3642	4822 050 13903	39k 1% 0.4W
3643	4822 050 13903	39k 1% 0.4W
3644	4822 050 24703	47k 1% 0.6W
3645	4822 111 50521	100k 5%
3646	4822 050 16802	6k8 1% 0.4W
3647	4822 050 16802	6k8 1% 0.4W
3648	4822 050 22702	2k7 1% 0.6W
3649	4822 050 24702	4k7 1% 0.6W
3651	4822 050 26801	680Ω 1% 0.6W
3652	4822 050 23301	330Ω 1% 0.6W
3653	4822 052 10109	10Ω 5% 0.33W
3654	4822 052 10108	1Ω 5% 0.33W
3655	4822 052 10109	10Ω 5% 0.33W
3656	4822 052 11108	1Ω 5% 0.5W
3657	4822 052 11108	1Ω 5% 0.5W
3658	4822 050 16804	680k 1% 0.4W
3659	4822 050 21505	1M5 1% 0.6W
3660	4822 050 11504	150k 1% 0.4W
3661	4822 101 11769	20k 20% LIN
3662	4822 050 26803	68k 1% 0.6W
3663	4822 116 52251	18k 5% 0.5W
3664	4822 050 28204	820k 1% 0.6W

3665	4822 050 22203	22k 1% 0.6W
3666	4822 050 25602	5k6 1% 0.6W
3667	4822 050 23902	3k9 1% 0.6W
3668	4822 050 24703	47k 1% 0.6W
3669	4822 052 11108	1Ω 5% 0.5W
3670	4822 050 12204	220k 1% 0.4W
3671	4822 050 13304	330k 1% 0.4W
3673	4822 050 22204	220k 1% 0.6W
3674	4822 050 21005	1M 1% 0.6W
3675	4822 050 18201	820Ω 1% 0.4W
3676	4822 050 24703	47k 1% 0.6W
3678	4822 050 24705	4M7 1% 0.6W
3679	4822 050 22204	220k 1% 0.6W
3680	4822 050 11802	1k8 1% 0.4W
3681	4822 117 11411	47Ω 1W
3682	4822 050 21002	1k 1% 0.6W
3684	4822 050 22203	22k 1% 0.6W
3685	4822 050 24703	47k 1% 0.6W
3686	4822 050 22203	22k 1% 0.6W
3687	4822 117 12995	330Ω 5% 3W
3689	4822 052 11108	1Ω 5% 0.5W
3690	4822 052 11108	1Ω 5% 0.5W
3692	4822 111 50521	100k 5%
3693	4822 117 12993	0Ω01 100% 0.4W
3694	4822 117 12993	0Ω01 100% 0.4W
3696	4822 053 21224	220k 0.5% 0.5W
3697	4822 053 21104	100k 5% 0.5W
3698	4822 111 50617	2k2 10% 0.5W
3801	4822 117 12985	RES ARRAY 4k7 9A 10P
3802	4822 117 12985	RES ARRAY 4k7 9A 10P
3803	4822 117 12986	RES ARRAY 4k7 6A
3804	4822 050 22201	220Ω 1% 0.6W
3805	4822 050 21001	100Ω 1% 0.6W
3806	4822 050 21001	100Ω 1% 0.6W
3807	4822 050 21001	100Ω 1% 0.6W
3808	4822 050 21001	100Ω 1% 0.6W
3809	4822 050 21001	100Ω 1% 0.6W
3810	4822 111 50522	33k 5% 1/6W
3811	4822 050 21003	10k 1% 0.6W
3812	4822 050 21003	10k 1% 0.6W
3813	4822 050 22201	220Ω 1% 0.6W
3814	4822 050 21001	100Ω 1% 0.6W
3815	4822 050 21001	100Ω 1% 0.6W
3816	4822 050 24702	4k7 1% 0.6W
3817	4822 050 21003	10k 1% 0.6W
3818	4822 050 21003	10k 1% 0.6W
3821	4822 050 21001	100Ω 1% 0.6W
3823	4822 050 22201	220Ω 1% 0.6W
3824	4822 050 22201	220Ω 1% 0.6W
3825	4822 050 22201	220Ω 1% 0.6W
3826	4822 050 22201	220Ω 1% 0.6W
3827	4822 050 13302	3k3 1% 0.4W
3828	4822 050 21003	10k 1% 0.6W
3831	4822 050 23902	3k9 1% 0.6W
3832	4822 050 21203	12k 1% 0.6W
5101	3138 178 71700	POWER TRANSFORMER
5102	3138 178 70890	LINE TER 15mH MIN.
5106	4822 152 20587	7.5μH
5107	4822 152 20587	7.5μH
5151	4822 156 21399	CHOKE COIL 180μH PM10 NC3
5152	4822 156 21399	CHOKE COIL 180μH PM10 NC3
5153	4822 157 52234	100μH
5154	4822 157 52234	100μH
5155	4822 157 52234	100μH
5201	4822 242 82202	100mH z 35R
5601	3138 178 71330	DRIVER TRANSFORMER
5602	3138 178 71730	DRUM COIL 20mH
5603	3138 178 71390	CENTERING TRANSF.
5604	4822 157 71509	6mH
5606	4822 157 11502	LINEARITY COIL 2.5μH
5607	3138 138 31190	LINE OUTPUT TRANSFORMER
5609	4822 146 10338	TRANSFORMER T/DAF(54A-5021)
5801	4822 157 63211	IND FXD SP0406 A 33U PM10 B
5802	4822 157 63211	IND FXD SP0406 A 33U PM10 B
6102	4822 130 10741	GBU6J
6105	4822 130 34685	BZX79-B75

6106	4822 130 31393	BYT52J
6107	4822 130 31607	RGP10D
6108	4822 130 31393	BYT52J
6109	4822 130 31393	BYT52J
6110	4822 130 31393	BYT52J
6113	4822 130 30621	1N4148
6114	4822 130 34441	BZX79-B22
6115	4822 130 34499	BZX79-B20
6117	4822 130 30842	BAV21
6151	4822 130 80572	RGP30J
6152	4822 130 80572	RGP30J
6153	5322 130 31938	BYV27-200
6154	4822 130 31607	RGP10D
6155	5322 130 31938	BYV27-200
6156	4822 130 30621	1N4148
6157	4822 130 31393	BYT52J
6158	4822 130 31607	RGP10D
6159	4822 130 30842	BAV21
6160	4822 130 34328	BZX79-B30
6161	4822 130 34173	BZX79-B5V6
6162	4822 130 34441	BZX79-B22
6163	4822 130 30621	1N4148
6201	4822 130 31607	RGP10D
6202	4822 130 31607	RGP10D
6203	4822 130 31253	BZX79-C2V4
6204	4822 130 34174	BZX79-B4V7
6205	4822 130 31607	RGP10D
6401	4822 130 32343	BYV26C
6403	4822 130 32343	BYV26C
6404	4822 130 31607	RGP10D
6405	4822 130 32343	BYV26C
6406	4822 130 34233	BZX79-B5V1
6407	4822 130 34499	BZX79-B20
6408	4822 130 34499	BZX79-B20
6409	4822 130 30621	1N4148
6410	4822 130 30621	1N4148
6411	4822 130 34382	BZX79-B8V2
6412	4822 130 30621	1N4148
6413	4822 130 30621	1N4148
6414	4822 130 34197	BZX79-B12
6415	4822 130 34441	BZX79-B22
6416	4822 130 34379	BZX79-B27
6417	4822 130 34281	BZX79-B15
6501	4822 130 30621	1N4148
6502	4822 130 30621	1N4148
6503	4822 130 30621	1N4148
6504	4822 130 34173	BZX79-B5V6
6505	4822 130 30842	BAV21
6506	5322 130 81917	SB140
6507	4822 130 30842	BAV21
6508	4822 130 30621	1N4148
6509	4822 130 30621	1N4148
6601	5322 130 31938	BYV27-200
6602	4822 130 83812	BY459-1500
6603	4822 130 34281	BZX79-B15
6604	4822 130 83539	EGP20G
6605	4822 130 31607	RGP10D
6606	4822 130 31607	RGP10D
6609	4822 130 34233	BZX79-B5V1
6610	4822 130 34382	BZX79-B8V2
6611	4822 130 42489	BYD33G
6615	4822 130 30621	1N4148
6616	5322 130 31969	RGP15M
6617	4822 130 30842	BAV21
6619	4822 130 83128	EGP30G
6620	5322 130 31938	BYV27-200
6621	5322 130 31938	BYV27-200
6622	4822 130 30621	1N4148
6623	4822 130 34328	BZX79-B30
6624	4822 130 34197	BZX79-B12
6625	4822 130 31607	RGP10D
6626	4822 130 31607	RGP10D
6802	5322 130 81917	SB140
6805	4822 130 34173	BZX79-B5V6
7102	5322 130 44779	BC338-40
7103	4822 130 11163	MOC8106
7104	4822 130 70025	BUX87P
7105	4822 130 10793	2SK1940-01
7106	4822 209 90025	MC44603P
7113	4822 209 81397	TL431CLPST
7152	4822 209 33083	L7808CV
7153	4822 209 80817	L7805CV
7154	4822 130 20297	BT169B
7155	4822 130 63081	BSN2

5322 390 20011		VET SILIC.P4 20GR	
			
1701	4822 267 10762	11P. MALE	
1702	4822 267 10763	10 P. MALE	
1703	4822 265 20366	1P PLUG 2.35 DIA - J10 B	
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2304	4822 122 33575	220pF 5% 50V	
2305	4822 122 33575	220pF 5% 50V	
2307	4822 126 13196	100nF 10% SMD 25V	
2308	4822 122 33177	10nF 20% 50V	
2309	4822 126 13196	100nF 10% SMD 25V	
2310	4822 122 33177	10nF 20% 50V	
2311	4822 122 33177	10nF 20% 50V	
2321	4822 124 23539	10µF 20% 50V	
2322	4822 126 13561	220nF 10% 16V	
2323	5322 122 32654	22nF 10% 63V	
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2324	4822 124 23539	10µF 20% 50V	
2325	4822 126 13196	100nF 10% SMD 25V	
2326	4822 124 80132	47µF 20% 25V	
2701	4822 126 13196	100nF 10% SMD 25V	
2702	4822 126 13196	100nF 10% SMD 25V	
2703	4822 126 13196	100nF 10% SMD 25V	
2704	4822 126 13196	100nF 10% SMD 25V	
2705	4822 126 13196	100nF 10% SMD 25V	
2706	4822 121 43696	100nF 100V	
2707	4822 126 13196	100nF 10% SMD 25V	
2708	4822 126 13196	100nF 10% SMD 25V	
2709	4822 124 40246	4.7µF 20% 63V	
2721	4822 124 42359	47µF 100V	
2722	4822 126 13196	100nF 10% SMD 25V	
2723	4822 121 43699	220nF 100V	
2724	4822 124 42162	1µF 160V	
2725	4822 252 60127	DSP-201M-C04F	
2726	4822 122 33172	390pF 5% 50V	
2731	4822 121 43699	220nF 100V	
2732	4822 124 42162	1µF 160V	
2733	4822 252 60127	DSP-201M-C04F	
2736	4822 122 33172	390pF 5% 50V	
2751	4822 121 43699	220nF 100V	
2752	4822 124 42162	1µF 160V	
2753	4822 252 60127	DSP-201M-C04F	
2756	4822 122 33172	390pF 5% 50V	
2761	4822 126 13196	100nF 10% SMD 25V	
2762	4822 124 23539	10µF 20% 50V	
2763	5322 126 10223	4.7nF 10% 63V	
2771	4822 126 13196	100nF 10% SMD 25V	
2772	4822 122 33646	470pF 10% 500V	
2773	4822 126 14102	1OnF 20% 2KV	
2775	4822 124 80531	10µF 20% 250V	
2776	4822 124 42359	47µF 100V	
2777	4822 124 80132	47µF 20% 25V	
2778	4822 126 13196	100nF 10% SMD 25V	
2779	4822 126 13692	47pF 1% 63V	
2780	4822 126 13692	47pF 1% 63V	
2781	4822 126 13692	47pF 1% 63V	
2782	4822 126 13692	47pF 1% 63V	
2783	4822 124 42149	220µF 20% 25V	
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3301	4822 051 20759	75Ω 5% 0.1W	
3302	4822 051 20759	75Ω 5% 0.1W	
3303	4822 051 20759	75Ω 5% 0.1W	
3304	4822 117 11503	220Ω 1% 0.1W	
3305	4822 050 24702	4k7 1% 0.6W	
3306	4822 051 20472	4k7 5% 0.1W	
3307	4822 050 21001	100Ω 1% 0.6W	
3308	4822 117 10833	10k 1% 0.1W	
3309	4822 051 20101	100Ω 5% 0.1W	
3310	4822 051 20101	100Ω 5% 0.1W	
3311	4822 051 20101	100Ω 5% 0.1W	
3318	4822 051 20339	33Ω 5% 0.1W	
3319	4822 051 20339	33Ω 5% 0.1W	
3320	4822 051 20339	33Ω 5% 0.1W	
3321	4822 050 21009	10Ω 1% 0.6W	
3322	4822 051 20471	470Ω 5% 0.1W	
3323	4822 051 20224	220k 5% 0.1W	
3324	4822 051 20332	3k3 5% 0.1W	
3325	4822 050 21003	10k 1% 0.6W	
3326	4822 117 10833	10k 1% 0.1W	
3327	4822 051 20562	5k6 5% 0.1W	
3328	4822 051 20182	1k8 5% 0.1W	
3329	4822 051 20561	560Ω 5% 0.1W	
3330	4822 051 20105	1M 5% 0.1W	
3331	4822 117 10833	10k 1% 0.1W	
3332	4822 051 20101	100Ω 5% 0.1W	
3333	4822 051 20101	100Ω 5% 0.1W	
3334	4822 051 20339	33Ω 5% 0.1W	
3335	4822 050 28209	82Ω 1% 0.6W	
3339	4822 050 24709	47Ω 1% 0.6W	
3701	4822 117 11507	6k8 1% 0.1W	
3702	4822 117 12955	2k7 1% 0.1W SMD	
3703	4822 050 24709	47Ω 1% 0.6W	
3704	4822 052 10339	33Ω 5% 0.33W	
3705	4822 117 10353	150Ω 1% 0.1W	
3706	4822 051 20228	20Ω 5% 0.1W	
3707	4822 117 11507	6k8 1% 0.1W	
3708	4822 117 12955	2k7 1% 0.1W SMD	
3709	4822 050 21001	100Ω 1% 0.6W	
3710	4822 117 10353	150Ω 1% 0.1W	
3711	4822 051 20228	2Ω 5% 0.1W	
3712	4822 117 11507	6k8 1% 0.1W	
3713	4822 117 12955	2k7 1% 0.1W SMD	
3714	4822 050 24709	47Ω 1% 0.6W	
3715	4822 117 10353	150Ω 1% 0.1W	
3716	4822 051 20228	2Ω 5% 0.1W	
3718	4822 051 20479	47Ω 5% 0.1W	
3719	4822 051 20479	47Ω 5% 0.1W	
3720	4822 051 20479	47Ω 5% 0.1W	
3721	4822 111 50618	82Ω 10% 0.5W	
3722	4822 051 20105	1M 5% 0.1W	
3723	4822 050 21002	1k 1% 0.6W	
3724	4822 050 23303	33k 1% 0.6W	
3725	4822 050 22204	220k 1% 0.6W	
3726	4822 116 52202	82Ω 5% 0.5W	
3727	4822 050 21003	10k 1% 0.6W	
3728	4822 051 20101	100Ω 5% 0.1W	
3729	4822 051 20479	47Ω 5% 0.1W	
3731	4822 111 50618	82Ω 10% 0.5W	
3732	4822 050 21005	1M 1% 0.6W	
3733	4822 050 21002	1k 1% 0.6W	
3734	4822 050 23303	33k 1% 0.6W	
3735	4822 050 22204	220k 1% 0.6W	
3736	4822 117 11149	82k 1% 0.1W	
3737	4822 050 21003	10k 1% 0.6W	
3738	4822 051 20101	100Ω 5% 0.1W	
3751	4822 111 50618	82Ω 10% 0.5W	
3752	4822 050 21005	1M 1% 0.6W	
3753	4822 051 20102	1k 5% 0.1W	
3754	4822 050 23303	33k 1% 0.6W	
3755	4822 050 22204	220k 1% 0.6W	
3756	4822 117 11149	82k 1% 0.1W	
3757	4822 117 10833	10k 1% 0.1W	
3758	4822 051 20101	100Ω 5% 0.1W	
3761	4822 050 21002	1k 1% 0.6W	
3762	4822 117 10833	10k 1% 0.1W	
3763	4822 051 20332	3k3 5% 0.1W	
3764	4822 051 20472	4k7 5% 0.1W	
3765	4822 117 11507	6k8 1% 0.1W	
3771	4822 050 21502	1k5 1% 0.6W	
3772	4822 116 80548	15k 5% 0.5W	
3776	4822 051 20101	100Ω 5% 0.1W	
3777	4822 051 20101	100Ω 5% 0.1W	
3778	4822 051 20101	100Ω 5% 0.1W	
3781	4822 050 24709	47Ω 1% 0.6W	
3782	4822 050 24709	47Ω 1% 0.6W	
3783	4822 050 24709	47Ω 1% 0.6W	
3784	4822 050 24709	47Ω 1% 0.6W	
3785	4822 117 12993	0Ω 100% 0.4W	
3786	4822 117 12993	0Ω 100% 0.4W	
3787	4822 051 20008	0Ω JUMP. (SMD)	
3788	4822 051 20472	4k7 5% 0.1W	
3793	4822 051 20008	0Ω JUMP. (SMD)	
3794	4822 051 20008	0Ω JUMP. (SMD)	
3795	4822 051 20008	0Ω JUMP. (SMD)	
3797	4822 051 20008	0Ω JUMP. (SMD)	
3798	4822 051 20008	0Ω JUMP. (SMD)	
3799	4822 051 20008	0Ω JUMP. (SMD)	
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5301	4822 157 52496	IND FXD SP0305 A	
5302	4822 242 82202	15U PM10 B	
5303	4822 242 82202	100mH z 35R	
5304	4822 242 82202	100mH z 35R	
5701	4822 157 52496	IND FXD SP0305 A	
5702	4822 157 53937	15U PM10 B IND FXD SPT0305 A 1U8 PM10 R	
5703	4822 157 53937	IND FXD SPT0305 A 1U8 PM10 R	
5722	4822 157 11503	HIGH FREQ.CHOKE 0.22µH PM10	
5731	4822 157 11503	HIGH FREQ.CHOKE 0.22µH PM10	
5751	4822 157 11504	HIGH FREQ.CHOKE 0.39µH PM10	
5771	4822 157 53189	CHOKE COIL 5.0µH PM10	
5781	4822 157 53937	IND FXD SPT0305 A 1U8 PM10 R	
5782	4822 157 53937	IND FXD SPT0305 A 1U8 PM10 R	
5783	4822 157 53937	IND FXD SPT0305 A 1U8 PM10 R	
5784	4822 157 53937	IND FXD SPT0305 A 1U8 PM10 R	
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6301	4822 130 34173	BZX79-B5V6	
6302	4822 130 34173	BZX79-B5V6	
6303	4822 130 34173	BZX79-B5V6	
6304	4822 130 34173	BZX79-B5V6	
6305	4822 130 80446	BAS32L	
6306	4822 130 80446	BAS32L	
6307	4822 130 34233	BZX79-B5V1	
6308	4822 130 34278	BZX79-B6V8	
6701	4822 130 34488	BZX79-B11	
6721	4822 130 80877	BAV103	
6722	4822 130 80877	BAV103	
6723	4822 130 80877	BAV103	
6724	4822 130 80877	BAV103	
6731	4822 130 30842	BAV21	
6732	4822 130 80877	BAV103	
6733	4822 130 80877	BAV103	
6734	4822 130 80877	BAV103	
6751	4822 130 30842	BAV21	
6752	4822 130 80877	BAV103	
6753	4822 130 80877	BAV103	
6754	4822 130 80877	BAV103	
6771	4822 130 42489	BYD33G	
7301	4822 209 16248	TDA4885/V2	
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Fh: 30 - 86KHz

Fv: 50 - 160Hz

CM23-17" General Description

1. Video pre-amplifier:

The TDA4885 (7301) is a monolithic integrated RGB pre-amplifier for colour monitor system with I2C bus control and OSD mixer. In addition to bus control beam current limiting. The signal are amplified in order to drive output driver LM2405 (77010. Individual black level control (pin 31/26/21 of 7301) with positive feedback and 3 DAC outputs f(pin 32/27/22) for external cut-off control.

The RGB input signals with nominal signal amplitude of 0.7Vb-w are capacitively coupled (2308/2309/2310) into TDA4885 from a 75 (3301/3302/3303) source and actively clamped to an internal DC voltage during signal black level by CLBL (pin 5) signal from deflection controller. A fast signal blanking is driven by CLBL signal and control bit DISV=1.

The input signal related to the internal reference black level can be simultaneous adjusted by contrast control via I2C bus with 6 bits DAC. For white point adjustment the individual for three channels gain control are driven by I2C bus with 6 bit DAC too.

In the output stage the nominal input signal will be amplified to 2.8Vb-w output color signal at nominal contrast and maximum gain. Individual out put clamping is to set the reference black level of the signal output to a value which corresponds to the extend cut-off voltage of the CRT cathodes, all feedback reference are driven by I2C bus.

The output signal from pre-amplifier R (pin30), G (pin20) and B (pin25) are sent to LM2405 to have around 40Vp-p amplitude, which are AC coupled to the CRT and need to be clamped to cut-off level. These are achieved by the black level clamp circuits 7721, 7722, 6721, 6722, 2724 3723, 3724, 3725, 3726, 3727, 3786 for Red channel, the rest channel are identical to it and all of three channels are control by TDA4885 (R: pin 32, .G: pin22, B: pin 27).

The OSD signal are inserted during fast blanking active period, the OSD and fast blanking signal are generated by OSD IC LS4378.

2.0. Micro controller:

The micro controller P83C830 is monitor micro controller with DDC (DDC1, DDC2B, DDC2B+ and DDC2AB) interface to the PC host. The internal built in hardware can detect sync. presence for the VESA DPMS standard of various display mode with separated (pin 13: H 16; V) or composite sync. (pin15) signal. The digital/analog voltage output can be used to control the video and deflection function of the monitor.

Besides to control two bus driven IC TDA4854 and TDA4885 via I2C bus , micro controller output still handle the rest function as V-DC shift, rotation, brightness, volume, stand-by, off mode, degaussing, LED color, 70/86 KHz, H-unlock detector, ABL, s-cap switch, H-Dc shift, and H-linearity, of course it is USB HUB controller. After alignment the data are stored at EEPROM 7804.

3. Deflection controller:

The TDA4854 is a high performance and efficient solution for autosync monitors. All functions are controllable by I2C bus. TDA4854 provides synchronization processing, horizontal and vertical with full autosync capability, it provides extended function e.g. as a flexible B+ control. and extensive set of geometry control facilities.

The HSYNC (pin15) is the input for horizontal synchronization signal which can be TTL separate or composite sync with positive or negative polarity. The horizontal oscillator capacitor at HCAP (pin 29) for optimum jitter performance the value of 10nF must not be changed. The given value is widely synchronised from 30KHz to 86KHz.

PLL1 phase detector compares the middle of horizontal sync with a fixed point on the oscillator sawtooth voltage. The PLL1 loop filter is connected to HPLL1 (pin 26). Via register HPOS the I2C bus allows a linear adjustment of the relative phase between horizontal sync and oscillator sawtooth (in PLL1 loop). Via registers HPARAL and HPINBAL correction of pin unbalance and parallelogram is done by modulating the phase between oscillator sawtooth and horizontal flyback (in loop PLL2).

The PLL2 phase detector is similar to PLL1 detector and compares the line flyback pulse at HFLB (pin 1) with the oscillator sawtooth voltage. The control currents are independent of horizontal frequency. The PLL2 detector thus compensates for the delay in the external horizontal deflection circuit by adjusting the phase of HDRV (pin8) output pulse.

EWDRV (pin 11) provides a complete EW drive waveform. The components horizontal pincushion, size, corner correction, and trapezium correction are controlled by the registers HPIN, HSIZE, HCOR and HTRAP.

The VSYNC (pin14) is the input for vertical synchronization signal it can be TTL separate or extract from composite sync. with positive or negative polarity. The widely synchronization range from 50 to 160Hz.

The amplitude of the differential output currents at VOUT1 and VOUT2 can be adjusted via register VSIZE. Register VPOS provides a DC shift at the sawtooth output VOUT1 and VOUT2 (pin 13 and pin 12) and the EW drive output EWDRV (pin11) in such a way, that the whole picture moves vertically while maintaining the correct geometry.

The horizontal moiré (also known as video moiré) can be cancelled by controlling register HMOIRE and cancelled vertical moiré (scan moiré) by controlling register VMOIRE.

The B+ function block can be used for buck converter in feed forward mode. It provides a frequency independent pulse width to control the deflection circuit.

Horizontal deflection:

The horizontal output signal 7503 pin 8 (limited at very low amplitude around 1.4Vp-p) directly fed to driver stage 7601, after boost to about 150Vp-p and amplifies current drive capability it drives output transistor 7602 to reach expected deflection current. The horizontal linearity correction circuits is composed by 4 segment S-cap. switch (7614, 7615, 7616, 7617) and one controllable linearity coil 5606 to get optimised linearity

The B+ control output signal is modulated with geometry control and size control signal together, it directly fed to buck converter 7605 via buffer stage 7603, 7604 to supply an adequate deflection voltage to output stage. The horizontal raster position control circuits is composed by 5603, 6605, 6606, 7606, 7607, 3607, 3608, 3611, 3612, 3613 and 5604 to reach right center position. To correct the tilt symptom while monitor facing the different direction or operating at various place, the rotation coil (plus control ckt. 7611, 7626, 7627...) is need to against the magnetic field changing.

5.0 EHT generator and Vertical output stage:

The EHT generator supplies 25KV anode voltage to picture tube. The generator is fully separated from the horizontal deflection but it is synchronized with the input horizontal sync. signal, this will prevent interference in the picture.

The output voltage is stabilised at 25KV. Feed back is taken from the anode via focus pack and 3659, 3660, 3662, 3661, 3406, 3436, 2419 fed to L4990A pin5 to get very stable EHT so there is no need to compensate the deflection for EHT variation. The out voltage is kept constant by regulating the supply voltage of the EHT output stage. This regulation is done by means of a duty cycle controlled series regulator (7621 controlled by L4990A).

The generator is protected against over beam current (over load) and over voltage (x-ray). Over load protection, if beam current high than 1.2mA then 7405 will be conducted and 12 Vdc directly fed to L4990A pin 14 the whole output will shut down immediately. It is activated if EHT exceed 27.5 - 29.5 KV, the generator will be switched off immediately and a restart can only be made by switching the monitor off and on, this circuits is composed by 6404, 2406, 6415, 6416, 3435 and L4990A.

EHT generator also supply tertiary voltage for concern circuits like:

+/- 13 Vdc and +50Vdc	: for vertical output stage
-150Vdc	: for spot killer
+320Vdc	: for vertical dynamic focus

Under this configuration, stand-by mode just switching off L4990A output (pull pin 7 to ground) to achieve less than 15 Watt consumption.

TDA 4854 vertical differential output pin 12/13 fed to 7404 TDA4861 input pin2/3 and

boost to expected deflection current around 1.5Ap-p.

Audio:

As usual we use one integrated 2 X 1 Watt IC for audio power amplifier, the input signal is 800mVrms and applied 25 speaker to get 1 Watt min. output for each channel. Audio function facilitate with microphone in/out, headphone out for multimedia application..

7.0 Power supply:

The power supply works at a fixed frequency about 40KHz in flyback mode and suitable for universal line input 90-264Vac. The proper PTC for the degaussing part, it working automatically at switch on for about 6 seconds or pushing an external button via OSD under PTC cold condition.

The mains voltage, rectified 6102 (GBU6J) and filtered 2105 (330 μ F/400V), is applied to the power transformer 5101 which switching the power transistor 7105, transfer the energy to secondary side. Besides, an auxiliary voltage is obtained from the primary side to supply the power controller MC44603 and MHR circuits (mains selection point 180Vac)

The hard start current is supply by rectified mains, current amplifier 7104 is implemented for power saving purpose. The power transformer secondary side rectified and filtered out defined voltages : +190V, +78V, -6.3V, +12V, (+8V, +5V are drop out from +12V). +78V is sensed and subtracted to a stabilized reference voltage; the error signal is amplified and send to PWM circuits via optocoupler, where it is compare with ramp waveform to keep constant voltage output by modulating duty cycle.

The primary current is sensed by the resistor 3116/3117, when current increase to over current threshold point then power shut down immediately. When a short circuits occurs on the outputs at high voltage (+190V, +78V), the primary current increase in such a way that the power supply turns off. As regards to low voltage (+12V, -6.3V, +8V, +5V) output short circuits because of low power consumption increase and primary current does not reach the turn off threshold. For this reason, these output are short circuits protected by extra circuits 7156 (for -6.3V), 7158 (for +12V, +8V, +5V).

An OVP circuits is built inside the power controller, while the voltage Vc above +17V and output is shut down immediately.

Power management off mode is directly short circuits optocoupler pin 2 to ground and let power supply enter burst mode, it delivery out very low power (less than 5 watt).

Use the information file (philips.inf) for Windows '95

Philips' monitors build in VESA DDC1/2B feature to support Plug & Play requirement for Windows '95. You can install this information file (philips.inf) in order to select your Philips monitor from "Monitor" dialog box in Windows 95 to activate Plug & Play application. The installation procedure based on **Windows '95 OEM Release 2 is specified** as follows,

1. Start Windows '95
2. Click the 'Start' button, point to 'Settings', and then click 'Control Panel'
3. Double-click the 'Display' icon, select the 'Settings' tab, then select "Advanced Properties" tab.
4. Select "Ok" in the "Install From Disk" dialog box.
5. Now, you can see the Philips monitor is appeared.
6. If the model name of Philips monitor is correct, click "Ok" tab in "Select Device" dialog box.
7. Then, click "Close" tab in "Advanced Properties" dialog box.
8. Now, you can select "Refresh Rate" to change monitor resolution

If your Windows '95 version is different or you need more detail installation information, please refer to Windows 95 user's manual.

1.High Frequency Generator (HFG)

Supplier
ELECTRO-TECHNIC PRODUCTS
4642 N. RAVENSWOOD AVE.
CHICAGO. ILL. 60640
AREA312, USA
PHONE: 561-2349
TYPE(MODEL) :BD-10-A (240VAC)

2.Condition, if poor focus with:

- Flick on background white
- White level various when adjust focus control (focus knob on flyback x'mer)

3.HFG Procedure:

The operation procedure of this tool is as following,

- Step 1. To dis assemble monitor chassis (includes grouding wire)/FHT cap from CRT and let CRT independent.
- Step 2. To keep the gap of HFG at max position and the output voltage is almost zero at this moment.
- Step 3. To connect CRT Anode to CRT ground by extra grounding wire.
- Step 4. To apply HFG output pin to CRT focus pin(s) and power on HFG.
- Step 5. To gradually decrease HFG gap to min position (increase the output voltage), and continue the voltage to CRT Focus pin(s) about 2 min.
- Step 6. Power off HFG and disconnect CRT anode grounding wire.
- Step 7. To re assembly monitor chassis/EHT cap to CRT immediately, then apply signal and power on the monitor as soon as possible. Let the monitor warm up at least 5 min.
- Step 8. To re adjust focus/G2 and White balance if necessary.
- Step 9. To perform function check according to product specification.

Please be informed that step 7 is the important of this procedure. The monitor should be warm up as soon as possible to prevent CRT cathode low emission.

4. Alternative procedure (before you buy HFG)

- Power off monitor and system
- Remove video pwb
- I/F cable must be connected to PC (keep signal input)
- Power on monitor and system
- short circuit for focus pin (see service manual) to ground (eg. metal bracket) with 1 or 2 seconds

Service Information

Service information 4822 727 21038 is herewith cancelled.

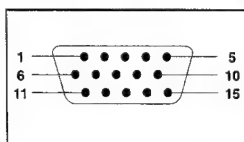
This [DDC Module (DDC cable)= 4822 320 12004(=4822 724 27550)] and [DDC V2(DDCV2N.EXE) software(3.5" disk)=4822 711 00024(= 4822 724 27560)] are used for "BU Monitor - Chungli product range" which incorporates a DDC1/DDC2B function that allows bi-directional communication between the monitor and PC system for optimal video configuration. [July 01 1997, Revision 2.0] ,which upgrades the software and service information(4822 727 21027 & 4822 727 21038) , is fully compatible with previous one.

Additional information :

Additional information about DDC (Display Data Channel) may be obtained from Video Electronics Standards Association (VESA). Extended Display Identification (EDID) information may be also be obtained from VESA.

Pin assignment

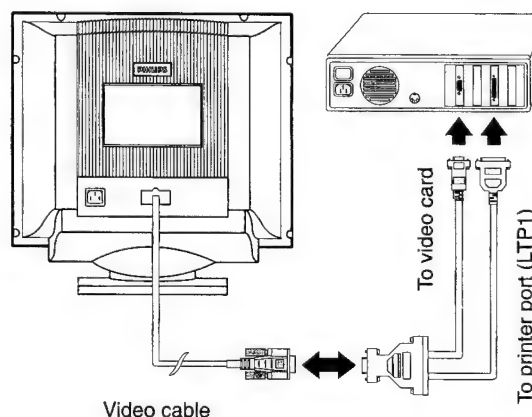
The 15-pin D-sub connector (male) of the signal cable (3 rows) for DDC feature :



Pin No.	Assignment	Pin No.	Assignment
1	Red video input	9	No pin
2	Green video input	10	Logic ground
3	Blue video input	11	Identical output connected to pin 10
4	Identical output connected to pin 10	12	Serial data line (SDA)
5	Ground	13	H.sync
6	Red video ground	14	V. sync (VCLK for DDC)
7	Green video ground	15	Data clock (SCL)
8	Blue video ground		

Connection

(Rear of the monitor)



DDC data re-programming

1. General

In case the DDC data memory IC, replaced due to a defect the data contents of this IC have to be re- programmed via a PC.

In case of replacement of the video (or deflection) board it is advised to re-soldered DDC IC from the old board onto the new board, in this case the IC dose not need to be re-programmed.

2. DDCV2N.EXE can be used for :

EDID Structure Version/Revision

Version	: 1
Revision	: 0

(text file)

and

Version	: 1
Revision	: 1

(.hex file)

DDC Reprogramming Instruction (for PHILIPS Branded models)

System Requirements

DDC Module (DDC cable), P/N = 4822 320 12004
 An Intel 386 (or above) PC or compatible
 DOS 6.0 or above
 DDCV2N.EXE software

Procedure

Connect DDC Cable as shown in cover page.
 Insert diskette in Drive a: Select Run "**DDCV2N.EXE**" under DOS or Win.
 Press "**Enter**" at the introduction screen

Menu Configuration:

File	R/W	Setup	Quit
Load EDID	Write EDID to EEPROM	Options	
Load txt file (V1.0)	Read From EEPROM	Barcode format	
Save EDID	Edit EDID Code		
Save txt File	Auto Scan		
Convert EDID Code			
Os shell			
Exit			

General :

1. How to change drive

Use arrow keys to highlight "**Options**" under the Setup menu, Press "**Enter**".
 Press "**F2**", then Press "**ESC**", fill in "**A**" or "**C**".
 [(If your .HEX files for different Model numbers in drive "A", then fill in "A").,
 (If your .HEX files for different Model numbers in drive "C", then fill in "C").
 Normally, to read DDC data from EEPROM of Monitor is enough.]

Press "**Enter**", then Press "**ESC**"

2. How to select .HEX files for different Model numbers example:

Use arrow keys to highlight "**Load EDID**" under the File menu, Press "**Enter**"
 Bring up BRANDED\ Press "**Enter**"

Bring up ..\n
21B772BE\
CM58\ ← select, Press "**Enter**"

Bring up ..\n
19A74C.HEX
19A00C.HEX ← at this highlight area, Press "**Enter**", then go back to last screen
 ← select for 19A580BQ/74C
 ← select for 19A580BQ/00C

How to write DDC hex files to Monitor

Use arrow keys to highlight "**Options**" under the Setup menu, Press "**Enter**"

Tab down to ID Serial Number, Use down arrow key to place the asterisk (*) beside "store in DEC with LSB first". Press "**control/enter**" to save.
(Ensure the top asterisk (*) is beside in store in HEX with LSB first.)

Use arrow keys to highlight "**Load EDID**" under the file menu, Press "**Enter**".

Use arrow keys to highlight "**BRANDED**", Press "Enter".

Use arrow keys to highlight "**the model list under subdirectly**", Press "**Enter**".

Use arrow keys to highlight "**Write EDID to EEPROM**" under the R/W menu, Press "**Enter**".

Use arrow keys to highlight "**Read from EEPROM**" under the R/W menu, Press "**Enter**".

Use arrow keys to highlight "**Edit EDID Code**" under the R/W menu, Press "**Enter**".

Verify the ID Serial number on the screen matches the serial number of the unit.

Verify EDID Structure Version is "Version :1, Revision :1

Press "**ESC**"

Use arrow keys to highlight "**Quit**", Press "**Enter**".

Menu Configuration:

File	R/W	Setup	Quit
Load EDID	Write EDID to EEPROM	Options	
Load txt file (V1.0)	Read From EEPROM	Barcode format	
Save EDID	Edit EDID Code		
Save txt File	Auto Scan		
Convert EDID Code			
Os shell			
Exit			

Remark: ID product code and ID Serial Number setting are for "PHILIPS" & "STENCIL" DDC TEXT

INSTRUCTIONS

How to change the Year, Week & Serial number of Monitor (for BRANDED models)

Use arrow keys to highlight "**Barcode format**", under the Setup menu, Press "**Enter**".

Bring up :

Barcode example : 9741222266
Barcode format : YYWWSSSSSS

Fill in 9741222266, press "Enter"
Fill in yywwssssss, press "Enter"

continue :

Barcode example : 9741222266
Barcode format : YYWWSSSSSS

Manufacture Year : 1997
Manufacture Week : 41
Serial no. : 222266

EDID [16] Week : 29
EDID [17] Year : 07 [Year-1990]
EDID [12..15] S/N. : 0003643a

data correct ? (Y/N) Y

Fill in "Y", don't press "Enter"

There is a description at the lower of the screen for Barcode format as below.

Barcode format : Y,W,S,X,- (year,week,s/no,ignore,fixed)

Y stands for "year".

W stands for "week"

S stands for "s/no (serial number)".

X stands for "ignore". Allow user to fill in any 'character' or 'numeric'.

- stands for "fixed". User have to fill in Special 'character' or 'numeric' for "AutoScan" if user fill in '-' at "Barcode format :".

Use arrow keys to highlight "**Auto Scan**" under the R/W menu, Press "**Enter**".

Bring up:

Auto Scan

◇◇△△□□□□□□

← year, week, serial number can be changed

- SerialNumber
- ◇ YearCode
- △ WeekCode
- * don't care

Fill in "Barcode data (for instance: 9741222266)" beside Auto Scan, press "**Enter**"

9745000240

9640001000

Press "**ESC**" "**ESC**", return to R/W menu.

How to change the serial number of Monitor (for PCEC models)

Use arrow keys to highlight "Barcode format", under the Setup menu, Press "Enter".

Bring up :

Barcode example : 5800C12345678
Barcode format : XXXXXSSSSSSSS

Fill in 5800C12345678, press "Enter"
Fill in xxxxxxxxsssss, press "Enter"

continued :

Barcode example : 5800C12345678
Barcode format : XXXXXSSSSSSSS

Manufacture Year : 1997
Manufacture Week : 40
Serial no. : 12345678
Serial no. ASCII : 5800C12345678
.....
.....

data correct ? (Y/N) Y

(can be changed), press "Enter"
(can be changed), press "Enter"

Fill in 5800C12345678, press "Enter"

Fill in "Y", don't press "Enter"

There is a description at the lower of the screen for Barcode format as below.

Barcode format : Y,W,S,X,- (year,week,s/no,ignore,fixed)

Y stands for "year".
W stands for "week"
S stands for "s/no (serial number)".
X stands for "ignore". Allow user to fill in any 'character' or 'numeric'.
- stands for "fixed". User have to fill in Special 'character' or 'numeric' for "AutoScan" if user fill in '-' at "Barcode format :".

Use arrow keys to highlight "Auto Scan" under the R/W menu, Press "Enter".

Bring up: Auto Scan

 ← year, week, serial number can be changed

☐ SerialNumber
☐ YearCode
☐ WeekCode
☒ don't care

Fill in "Barcode data (for instance: 5800C12345678)" beside Auto Scan, press "Enter"
5800J28256153
58008H75602720

Press "ESC" "ESC", return to R/W menu.

For the original DDC TEXT file:

Use arrow keys to highlight "**Load txt file (V1.0)**" under the File menu, Press "**Enter**"

1. Data text file editing options

The data text file can be edited by the DOS-editor.

2. Re-programming instructions

- Turn on PC and monitor
- Connect the module to the PC and monitor, see connection figure on front page.
- Insert the floppy disk into drive A: and follow the following routine:
- Type "DDC" and then press "ENTER". On the screen it will show: "Adaptor check...", then the screen will display "main menu".
- Use the arrow keys to highlighting items 1, 2, 3, 4, 0 :

Step 1 - Select item "1", which appear as a highlight, and press "ENTER" to convert a text data into EDID data.

- Enter the text file name with directory path eg. "a:\CM0200\BND14PHL.TXT" and press "ENTER". The available text file on the floppy will now be converted into a binary file that can be downloaded into the memory IC.
- Press "ENTER" to continue, the program will return to main menu.

Step 2 - Select item "2", under the main menu , and press "ENTER" to write a complete EDID data file to EEPROM. Now, the data will be loaded into the memory IC.

- Press "ENTER" to continue, the program will return to main menu.

Step 3 - Select item "3", under the main menu, and press "ENTER" to verify that EDID downloading is successful. This function also can be used to view current DDC data in monitor.

- Press "ENTER" and follow the indication on the screen to return main menu.

Step 4 - Select item "4", under the main menu, and press "ENTER" to enter DOS prompt and DOS Editor of your system. By DOS Editor, the function allow you to modify or update DDC data eg. manufacturing week, serial number etc according to the rear cover type label of the set.

The production serial number of type label consist of:
 TY - origin of production centre
 00 - technical service change code
 95 - production year
 12 - production week
 123456 - 6 digits (max) serial number

Once the modification of DDC text file is completed under DOS Editor, Quit to DOS prompt and return to main menu by typing "EXIT" and press "ENTER". After text file is modified according above description, you can repeat the process of step 1 to step 3 to re-program DDC data again.

Step 5 - Select item "0", under the main menu, and press "ENTER" to quit DDC program and return to DOS prompt.

3. Remark 1 :

During the re-programming, it is recommended to follow step 1, step 2, and step 3.

Due to different format requirements by customer, If read DDC data from monitor by step 3 , product ID and serial number will show 3 formats, <decimal>, <hexa-decimal>, and <ASCII>, the correct format can be obtained by running step 1 again (the correct format can be detected and identified automatically by step 1 from original text file).

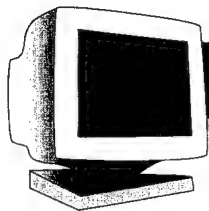


TABLE OF CONTENTS

17B2302Q

GETTING STARTED

INTRODUCTION	1
SAFETY	1
DESCRIPTION OF CONTROLS	2-3
SETTING UP GUIDE	Foldout

HOW TO USE THE ON SCREEN DISPLAY

FRONT PANEL CONTROLS

Contrast	4
Brightness	4
Volume	5

MAIN MENU

Mute	5
Degauss	6
Monitor Status	6

MAIN MENU / ADVANCED CONTROLS WINDOW

Power Saving	7
Language	7
DDC1 / 2B	8
OSD Timer	8
Moire.	9
Sync Input Select.	9

MAIN MENU / COLOR TEMPERATURE WINDOW

9300° K	10
6500° K	10
User 1	11
User 2	11

MAIN MENU / GEOMETRY WINDOW

Rotation	12
Pincushion	12
Trapezoid	12
Balanced Pincushion	12
Parallelogram	12

MAIN MENU / SIZE & POSITION WINDOW

Zoom	13
Horizontal Position	13
Horizontal Size	13
Vertical Position	14
Vertical Size	14

MAIN MENU / SAVE & CANCEL

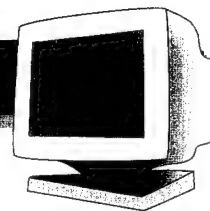
15

MAIN MENU / EXIT OSD & RESET

15

ADDITIONAL INFORMATION

AUDIO & USB SET UPS	16
POWER SAVING FEATURE	17
GLOSSARY	17
PIN ASSIGNMENT	18
SPECIFICATIONS	18
INDEX	18
TROUBLESHOOTING	19
WARRANTY (APPENDIX)	60



Introduction

The Philips 107MB color monitor displays sharp and brilliant images of text and graphics with a maximum resolution of 1280x1024 pixels. It is optimal for Windows, CAD / CAM / CAE, desktop publishing, spread sheets, multi-media, and any other application that demands a large screen size and high resolutions.

The monitor automatically scans horizontal frequencies from 30KHz to 86KHz, and vertical frequencies from 50Hz to 160Hz. With microprocessor-based digital-controlled circuitry and On Screen Display (OSD) controls, the monitor can automatically adjust itself to the video card's scanning frequency and can display an image with the precise parameters you desire.

Features

- An anti-glare, anti-static, anti-reflection, high-contrast screen coating eliminates any bad effects caused by room light reflecting on and dust attracted to the screen's surface.
- With the Color Adjustment feature, you can easily choose different preset color temperatures or set your own customized color parameters.
- The Image Tilt Adjustment feature corrects a rotated image. This adjustment compensates for the distortions caused by elements such as the Earth's magnetic field.
- The full-size feature expands the image on the monitor to fill the screen when used in factory preset modes.

- Optional USB Connector at the back of the monitor is prepared for the Universal Serial Bus hub. You can easily and flexibly connect USB-designed devices – such as a mouse or keyboard – to the monitor for true Plug-and-Play function. The USB hub is an accessory that may be purchased from your local Philips dealer.

- Green Design – including automatic power saving function (NUTEK) and low-emission compliance (optional TCO '95) – shows your commitment to the environment.

- DDC1 / DDC2B allows communication between the monitor and the PC for optimal video configuration.

- Moire Cancellation eliminates diffraction, a fringe pattern in the picture.

NOTE: Your monitor operates according to the VESA-standard DDC level 1 / 2B. Only computers that support the same guidelines and operate at an equal or higher level can use this feature. If your computer does not support the relevant guidelines, you can still use your monitor and computer. However, you may need to manually specify the appropriate resolution in the computer.

As an Energy Star Partner, Philips has determined that this product meets the Energy Star guidelines for energy efficiency.



Contact us at our web site: <http://www.monitors.be.philips.com>

Safety precautions and maintenance

- Unplug the monitor, if you are not going to use it for an extended period of time.
- Unplug the monitor, if you need to clean it with a slightly damp cloth. Wiping the screen with a dry cloth is okay when the power is disconnected. However, never use alcohol or ammonia-based liquids.
- Consult a service technician if the monitor does not operate normally when following the instructions in this manual.
- The back cover should be removed only by qualified service personnel.
- Keep the monitor out of direct sunlight and away from stoves or any other heat source.
- The top of the monitor is not a shelf. Remove any object that could fall into the vents or prevent proper cooling of the monitor's electronics.

- Keep the monitor dry. To avoid electric shock, do not expose it to rain or excessive moisture.
- Keep the monitor away from magnetic objects, such as speakers, electric motors, transformers, etc.
- When positioning the monitor, make sure the power plug and outlet are easily accessible.

End-of-life disposal

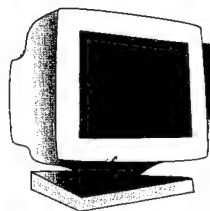
Your new monitor contains materials that can be recycled and reused. Specialized companies can recycle your product to increase the amount of reusable materials and to minimize the amount to be disposed of.

Please find out about the local regulations on how to dispose of your old monitor.

ENERGY STAR is an U.S. registered mark.

IBM, IBM PC, and Power PC are registered trademarks of International Business Machines Corporation.

Apple, Macintosh, Quadra, Performa, and Centris are registered trademarks of Apple Computer, Inc.



DESCRIPTION OF CONTROLS

POWER Button – Turns the electricity On and Off.

TOP VIEW

VOLUME Button – Press the button to adjust the sound from the speakers.

BRIGHTNESS Button – Press the button to adjust the screen's brightness.

CONTRAST Button – Press this button to adjust the screen's contrast.

LED – Light Emitting Diode turns green when the monitor is on and at full power.

EARPHONES Jack – Plug in earphones here. This mutes the sound from the front speakers.

BUILT-IN MICROPHONE – Allows you to "speak" to your computer.

FRONT VIEW

PHILIPS

LEFT VIEW

ON SCREEN DISPLAY (OSD) Button – Brings up the On Screen Display and helps you navigate through it.

ROTARY Knob – Helps guide you through the On Screen Display and also adjusts settings such as Volume, Brightness, and Contrast.

CABLE COVER – Snaps onto the back of the monitor to conceal cable connections. (Cable connections in the manual are shown without the cover on.)

SPEAKERS – Transmit sounds from your computer or amplifier. One speaker on each side of the monitor.

MICROPHONE Jack – Plug in a microphone to transmit sound through the side speakers or to the computer. See page 16.

REAR VIEW

USB Connector (under the edge, optional) – Slot for plugging in the USB Hub-optional hardware that allows true Plug-and-Play. For details, see page 16.

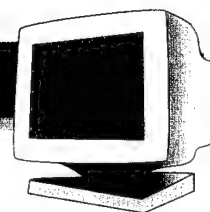
AUDIO IN Jack – Connect the supplied audio cable to send sound from a computer or amplifier to the monitor's speakers.

MICROPHONE OUT Jack – Connect the supplied microphone cable to transmit sound from the monitor to a computer or amplifier.

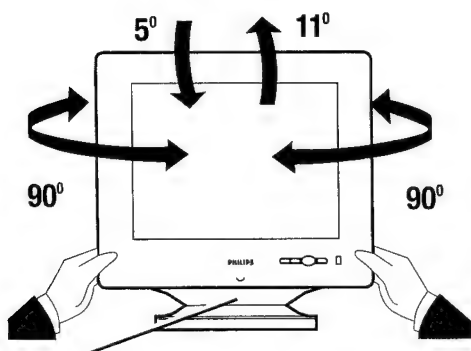
POWER Plug – Plug the power cord in here. See foldout for details.

VIDEO IN Jack – One end of the cable is already connected here. The other end connects to the computer. See foldout for details.

DESCRIPTION OF CONTROLS

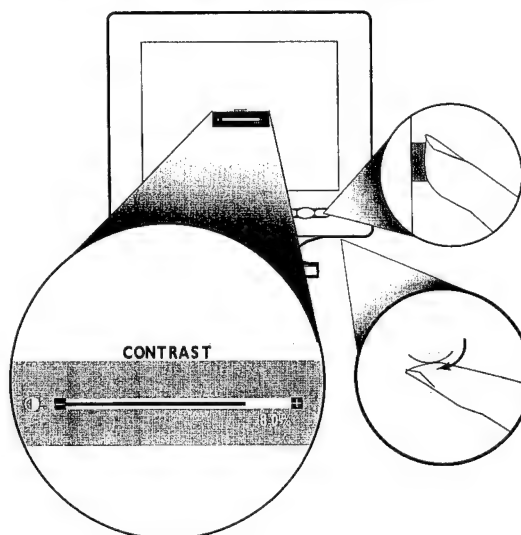


PEDESTAL



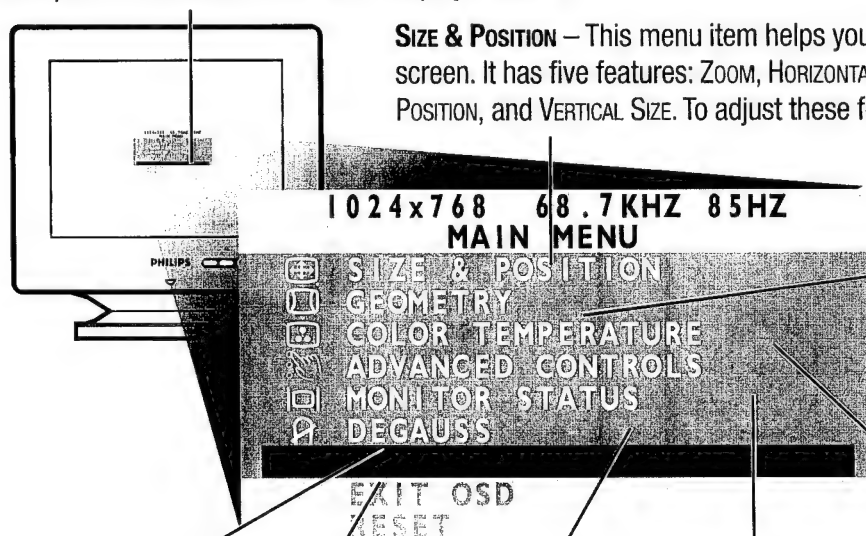
PEDESTAL – With the built-in pedestal, you can tilt and swivel the monitor to the most comfortable viewing angle. To best use your monitor, always place it at eye level.

FRONT PANEL BUTTONS / ROTARY KNOB



USING THE FRONT PANEL BUTTONS – Select one of the four front panel buttons, then use the Rotary knob to make the adjustment or select an additional feature. To adjust a particular feature, see the page for that feature. *For example, Contrast is on page 4.*

ON SCREEN DISPLAY – Your monitor is preset at the factory. However, you can adjust it using the ON SCREEN DISPLAY button and the ROTARY knob described on page 2. The way to do so is through the On Screen Display (OSD). Below is a brief description of the seven On Screen Display windows.



SIZE & POSITION – This menu item helps you maximize the position of your screen. It has five features: ZOOM, HORIZONTAL POSITION, HORIZONTAL SIZE, VERTICAL POSITION, and VERTICAL SIZE. To adjust these features, turn to pages 13 - 14.

GEOMETRY CONTROLS – This menu item has five features: PINCUSHION, BALANCED PINCUSHION, TRAPEZOID, PARALLELOGRAM, and ROTATION. To adjust these features, turn to page 12.

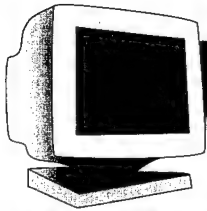
DEGAUSS – Demagnetizes your screen. If color splotches or impurities appear on your screen, you may want to try this. For details, see page 6.

MUTE – Turns the sound from your speakers On or Off. Mute Off is the default. For details, see page 5.

MONITOR STATUS – Lists the current vertical and horizontal scanning frequencies and tells you the serial number of the monitor. For details, see page 6.

ADVANCED CONTROLS – This menu item has six features: POWER SAVING, LANGUAGE, DDC1 / 2B, OSD TIMER, MOIRE, and SYNC INPUT SELECT. To adjust these features, turn to pages 7 - 9. *Note: LANGUAGE allows you to change the On Screen Display from English to French, Spanish, German, or Italian. See page 7 for details.*

COLOR TEMPERATURE – Select the temperature setting for the best color for your work. You can even customize your color settings. There are four selections: 9300° K, 6500° K, USER 1, and USER 2. For details, turn to pages 10 - 11.

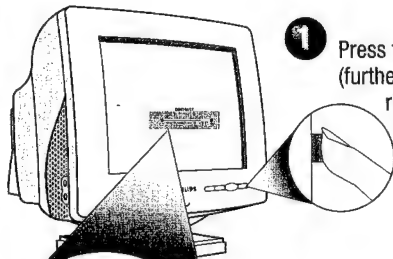


HOW TO USE THE ON SCREEN DISPLAY (OSD)

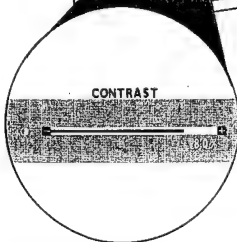
FRONT PANEL CONTROLS

CONTRAST

- 1** To adjust your screen's contrast, follow the steps below. Contrast is the difference between the light and dark areas on the screen. A 100% contrast level is recommended.

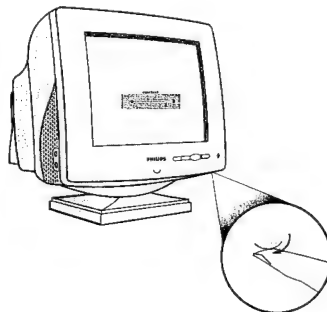


- 1** Press the Contrast button (furthest one on the right) on the front of the monitor.

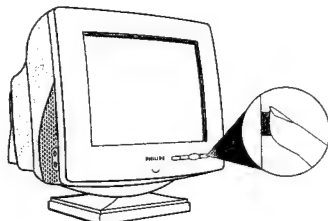


The Contrast window appears.

- 2** Turn the ROTARY knob (at the lower right-hand corner of the monitor) to adjust the contrast.



- 3** When finished, press the CONTRAST button again. The Contrast screen disappears.




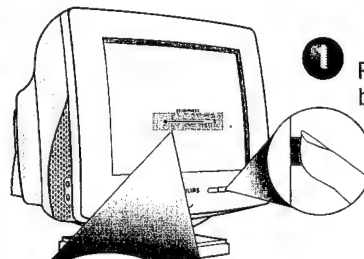
SMART HELP

To continue to Brightness, press the BRIGHTNESS button on the front of the monitor. Next, follow steps 2 - 3 under BRIGHTNESS.

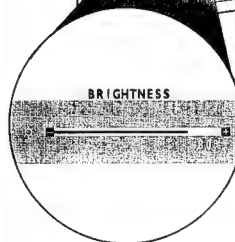
If you do not press the CONTRAST button a second time, the Contrast window will "time out" (disappear) after five seconds. You can change this time. See page 8 for time out options.

BRIGHTNESS

-  To adjust your screen's brightness, follow the steps below. Brightness is the overall intensity of the light coming from the screen. A 50% brightness level is recommended.

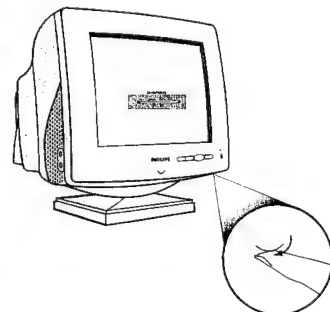


- 1** Press the Brightness button (second one from the left) on the front of the monitor.

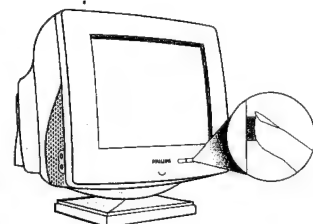


The Brightness window appears.

- 2** Turn the ROTARY knob (at the lower right-hand corner of the monitor) to adjust the brightness.



- 3** When finished, press the BRIGHTNESS button again. The Brightness screen disappears.



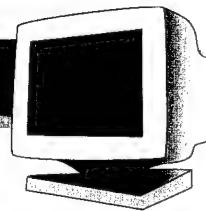
SMART HELP

To continue to Volume, press the VOLUME button on the front of the monitor. Next, follow steps 2 - 3 under VOLUME.

If you do not press the BRIGHTNESS button a second time, the Brightness window will "time out" (disappear) after five seconds. You can change this time. See page 8 for time out options.

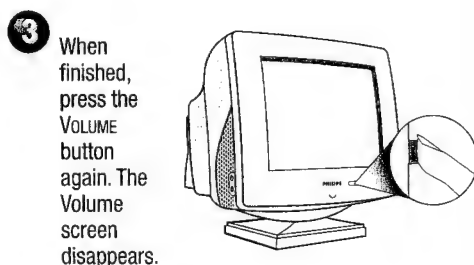
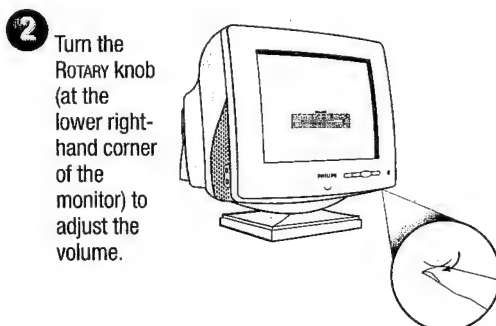
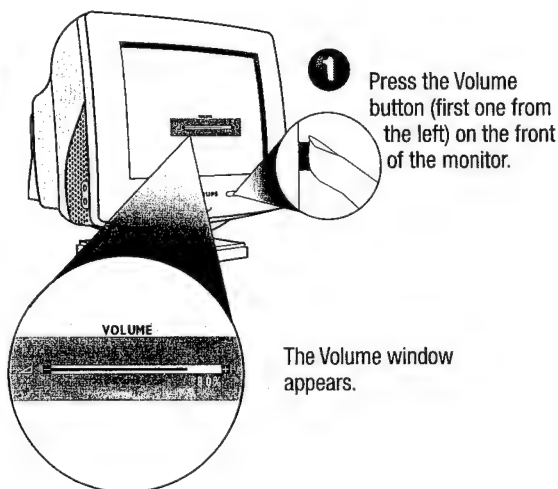
HOW TO USE THE ON SCREEN DISPLAY (OSD)

FRONT PANEL CONTROL / MAIN MENU



VOLUME

To adjust your monitor's volume, follow the steps below. The volume control adjusts the sound from the two front-mounted speakers or the earphones jack.



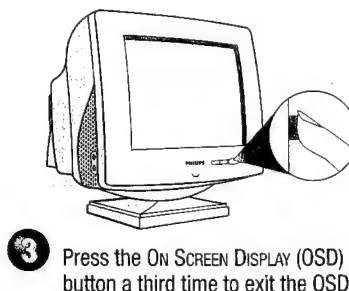
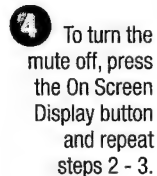
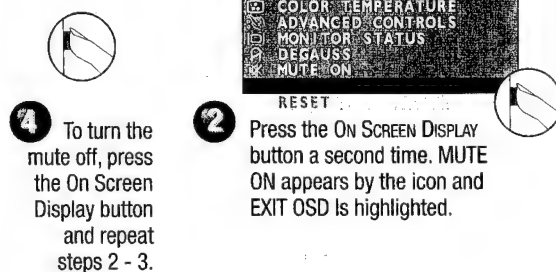
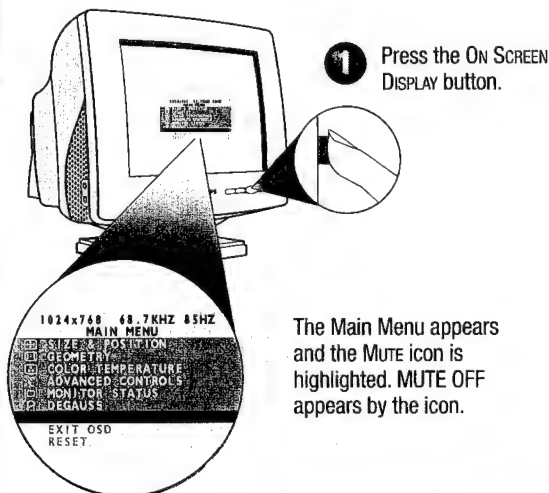
SMART HELP

After Volume Window has disappeared, to continue to the Main Menu, press the larger OSD (On Screen Display) button between the BRIGHTNESS and CONTRAST buttons. Next, follow steps 2 - 3 under MUTE.

If you do not press the VOLUME button a second time, the Volume window will "time out" (disappear) after five seconds. You can change this time. See page 8 for time out options.

MUTE

To completely turn off the volume (but still return to the former level), follow the steps below. The mute control turns off the sound from the two front-mounted speakers or the earphones jack. *Note: audio is muted from monitor speakers when earphones are connected. See pages 2 and 16 for details.*



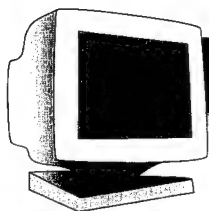
SMART HELP

To go to DEGAUSS ...

... instead of pressing the On Screen Display (OSD) button a third time, turn the ROTARY knob until DEGAUSS is highlighted. Next, press the OSD button. Turn to the next page and follow steps 2 - 3.

... once you have exited the OSD, press the OSD button and turn the Rotary knob until DEGAUSS is highlighted. Next, press the OSD button. Turn to the next page and follow steps 2 - 3.

If you do not press the OSD button a third time, the OSD window will "time out" (disappear) after five seconds. You can change this time. See page 8 for time out options.



HOW TO USE THE ON SCREEN DISPLAY (OSD)

MAIN MENU WINDOWS

DEGAUSS

A Degaussing removes electromagnetic build up that may distort the color on your screen. To degauss your screen, follow the steps below.

1 Press the On Screen Display button.

2 Turn the ROTARY knob until DEGAUSS is highlighted.

3 Press the On Screen Display button to degauss your screen.

For a moment, the screen will be distorted. Then it will return to normal. You will be at Main Menu. Exit OSD will be highlighted.

MONITOR STATUS

I Monitor Status tells you the vertical and horizontal scanning frequencies that your computer is using to operate your monitor. It also tells you the serial number of your monitor. *Note: This screen is for review only.*

1 Press the On Screen Display button.

2 Turn the ROTARY knob until MONITOR STATUS is highlighted.

3 Press the On Screen Display button to bring up the MONITOR STATUS screen.

4 Press the On Screen Display button to exit the Monitor Status screen and return to the Main Menu. Exit OSD will be highlighted.

SMART HELP

After returning to the Main Menu ...

... to continue to MONITOR STATUS, turn the ROTARY knob until MONITOR STATUS is highlighted. Next, follow steps 2 - 3 under MONITOR STATUS in the next column.

... to exit completely, press the OSD button.

SMART HELP

After returning to the Main Menu ...

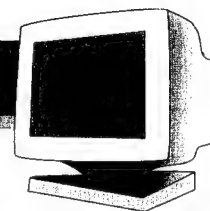
... to continue to ADVANCED CONTROLS, turn the ROTARY knob until ADVANCED CONTROLS is highlighted. Next, follow steps 2 - 3 under ADVANCED CONTROLS on the next page.

... to exit completely, press the OSD button.



Note: Neither the scanning frequencies nor the serial number can be changed at this screen. The scanning frequencies are established by your computer. They also appear at the top of the Main Menu screen. The serial number is entered at the factory.

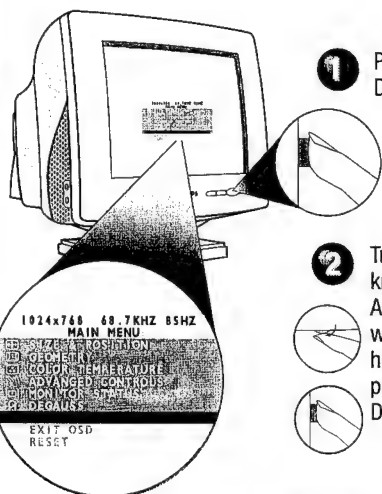
HOW TO USE THE ON SCREEN DISPLAY (OSD)

ADVANCED CONTROLS WINDOW



POWER SAVING

  **POWER SAVING** helps save energy when the monitor is on but not being used. After a preset time, the monitor will go blank if not being used. "**POWER SAVING ON**" is the default setting. To turn **POWER SAVING OFF**, follow the steps below.



1 Press the On Screen Display button.

2 Turn the ROTARY knob until the **ADVANCED CONTROLS** window is highlighted. Next, press the On Screen Display button.

ADVANCED CONTROLS

LANGUAGE
DDC1 / 2B ON
OSD TIMER
MOIRE
SYNC INPUT SELECT
SAVE & RETURN TO MAIN MENU
RECALL

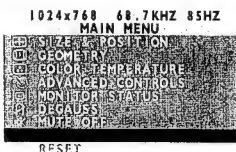
5 Press the On Screen Display button to exit the Main Menu.

3 Press the On Screen Display button to change to **POWER SAVING OFF**.



ADVANCED CONTROLS

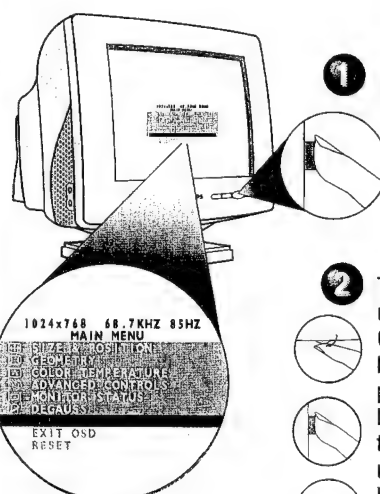
POWER SAVING ON
LANGUAGE
DDC1 / 2B ON
OSD TIMER
MOIRE
SYNC INPUT SELECT
RECALL

4 Press the On Screen Display button again to save your selection.



LANGUAGE

  The On Screen Display shows its settings in one of five languages. The default is English, but you can select French, Spanish, German, or Italian. To select **LANGUAGE**, follow the steps below.



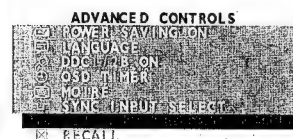
1 Press the On Screen Display button.

2 Turn the ROTARY knob until the **ADVANCED CONTROLS** window is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until **LANGUAGE** is highlighted.

ADVANCED CONTROLS

POWER SAVING ON
DDC1 / 2B ON
OSD TIMER
MOIRE
SYNC INPUT SELECT
SAVE & RETURN TO MAIN MENU
RECALL

6 Press the On Screen Display button to exit the Main Menu.



3 Press the On Screen Display button to bring up **LANGUAGE** screen.

LANGUAGE

DEUTSCH
FRANCAIS
ITALIANO
ESPAÑOL

5 Press the On Screen Display button again to save your selection.

4 Turn the ROTARY knob until the desired language is selected. Then, press the On Screen Display button. *Note: a checkmark appears beside the current selection.*

SMART HELP

To make other changes in the **ADVANCED CONTROLS** window ...

... after returning to **ADVANCED CONTROLS** window [but before pressing the On Screen Display (OSD) button in **STEP 4**], turn the ROTARY knob until another feature – for example, **LANGUAGE** – is highlighted. Next, follow steps 2 - 6 under **LANGUAGE**.

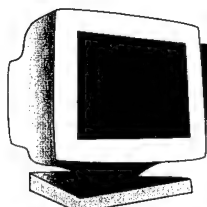
... after you have exited completely, press the OSD button and follow the steps under that feature, for example, **LANGUAGE**.

SMART HELP

To make other changes in the **ADVANCED CONTROLS** window ...

... after returning to **ADVANCED CONTROLS** window [but before pressing the On Screen Display (OSD) button in **STEP 5**], turn the ROTARY knob until another feature – for example, **DDC1 / 2B** – is highlighted. Next, turn to the next page and follow steps 2 - 5 under **DDC1 / 2B**.

... after you have exited completely, press the OSD button and follow the steps under that feature, for example, **DDC1 / 2B**.

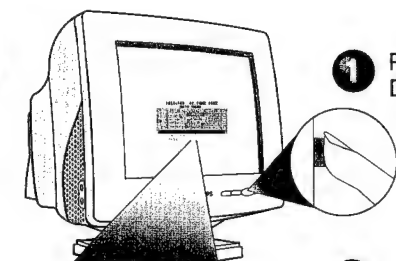


HOW TO USE THE ON SCREEN DISPLAY (OSD)

ADVANCED CONTROLS WINDOW

DDC1 / 2B

Many newer computers have DDC technology that this monitor takes advantage of to provide you better picture quality. **"DDC1 / 2B On"** is the default setting. If your computer's video card is not DDC compatible, you may experience interference, "noise," or no color on your monitor. If so, try turning this feature off.



1 Press the On Screen Display button.



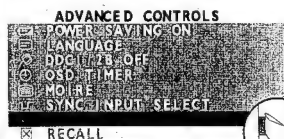
2 Turn the ROTARY knob until the ADVANCED CONTROLS window is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until DDC1 / 2B On is highlighted.



5 Press the On Screen Display button to exit the Main Menu.



3 Press the On Screen Display button to change to DDC1 / 2B Off.



4 Press the On Screen Display button again to save your selection.

SMART HELP

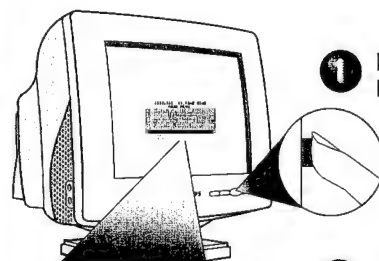
To make other changes in the ADVANCED CONTROLS window ...

... after returning to ADVANCED CONTROLS window [but before pressing the On Screen Display (OSD) button in STEP 4], turn the ROTARY knob until another feature – for example, OSD TIMER – is highlighted. Next, follow steps 2 - 6 under OSD TIMER.

... after you have exited completely, press the OSD button and follow the steps under that feature, for example, OSD TIMER.

OSD TIMER

With OSD TIMER you can set the time for the On Screen Display to time out. Your choices range from 5 to 50 seconds. To select OSD TIMER, follow the steps below. *Note: Ten seconds is the default setting.*



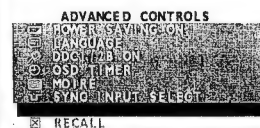
1 Press the On Screen Display button.



2 Turn the ROTARY knob until the ADVANCED CONTROLS window is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until OSD TIMER is highlighted.



6 Press the On Screen Display button to exit the Main Menu.



3 Press the On Screen Display button to bring up OSD TIMER screen.



5 Press the On Screen Display button again to save your selection.



4 Turn the ROTARY knob until the desired time out period is selected. Then, press the On Screen Display button. *Note: a checkmark appears beside the current OSD TIMER period.*

SMART HELP

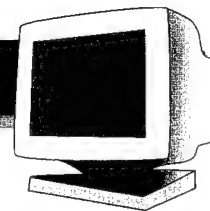
To make other changes in the ADVANCED CONTROLS window ...

... after returning to ADVANCED CONTROLS window [but before pressing the On Screen Display (OSD) button in STEP 5], turn the ROTARY knob until another feature – for example, MOIRE – is highlighted. Next, turn to the next page and follow steps 2 - 6 under MOIRE.

... after you have exited completely, press the OSD button and follow the steps under that feature, for example, MOIRE.

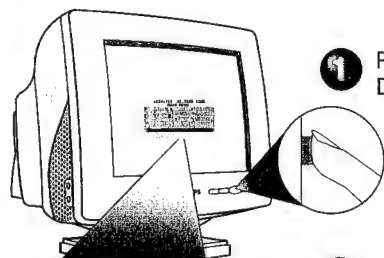
HOW TO USE THE ON SCREEN DISPLAY (OSD)

ADVANCED CONTROLS WINDOW



MOIRE

Moire is a fringe pattern arising from the interference between two superimposed line patterns. To adjust your Moire, follow the steps below. *Note: Use only if necessary. Activating Moire can affect sharpness.*



1 Press the On Screen Display button.



2 Turn the ROTARY knob until the ADVANCED CONTROLS window is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until MOIRE is highlighted.



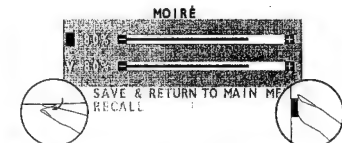
6 Once you have made the adjustments, press the On Screen Display button once to save your changes, then again to exit the Advanced Controls window, and a third time to exit the Main Menu.



3 Press the On Screen Display button twice to bring up MOIRE screen and highlight H(ORIZONTAL) MOIRE.



5 To adjust the VERTICAL MOIRE, turn the Rotary knob until V(ERTICAL) MOIRE is highlighted. Then, press the On Screen Display button again and repeat step 4.



4 Turn the ROTARY knob until the desired HORIZONTAL MOIRE is selected. Then, press the On Screen Display button.

SMART HELP

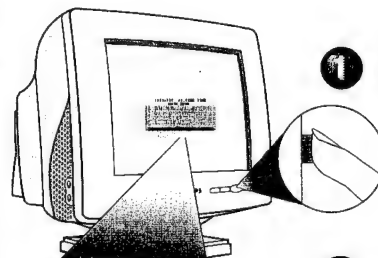
To make other changes in the ADVANCED CONTROLS window ...

... after returning to ADVANCED CONTROLS window [but before pressing the On Screen Display (OSD) button a third time in STEP 6], turn the ROTARY knob until another feature – for example, SYNC INPUT SELECT – is highlighted. Next, follow steps 2 - 6 under SYNC INPUT SELECT.

... after you have exited completely, press the OSD button and follow the steps under that feature, for example, SYNC INPUT SELECT.

SYNC INPUT SELECT

SYNC INPUT SELECT synchronizes your monitor with the video card in your computer. In most cases you will not need to use this feature. To adjust your SYNC INPUT SELECT, follow the steps below. *Note: Use only if necessary. If your screen has a greenish cast to it that cannot be adjusted for with the Color Temperature controls on pages 10 and 11, then try this.*



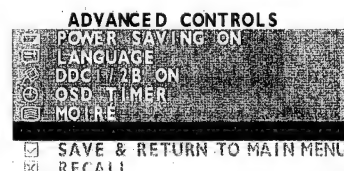
1 Press the On Screen Display button.



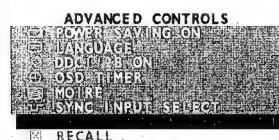
2 Turn the ROTARY knob until the ADVANCED CONTROLS window is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until SYNC INPUT SELECT is highlighted.



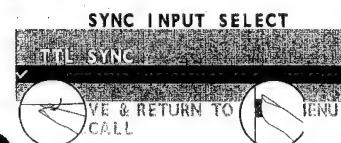
6 Press the On Screen Display button to exit the Main Menu.



3 Press the On Screen Display button to bring up SYNC INPUT SELECT screen.



5 Press the On Screen Display button again to save your selection.



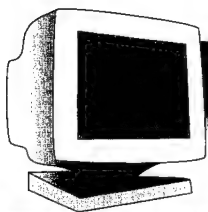
4 Turn the ROTARY knob until either TTL SYNC or SYNC ON GREEN is selected. Then, press the On Screen Display button. *Note: a checkmark appears beside the current Sync Input selected.*

SMART HELP

To make other changes in the Main Menu window ...

... after returning to THE Main Menu [but before pressing the On Screen Display (OSD) button in STEP 6], turn the ROTARY knob until another feature – for example, COLOR TEMPERATURE – is highlighted. Next, press the OSD button, turn to the next page and follow steps 2 - 7 under COLOR TEMPERATURE.

... after you have exited completely, press the OSD button and use the ROTARY knob to select that feature, for example, COLOR TEMPERATURE.



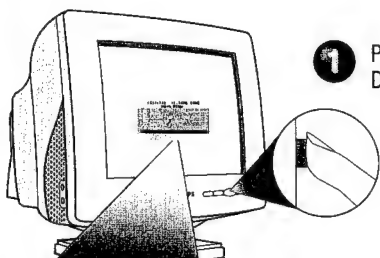
HOW TO USE THE ON SCREEN DISPLAY (OSD)

COLOR TEMPERATURE WINDOW

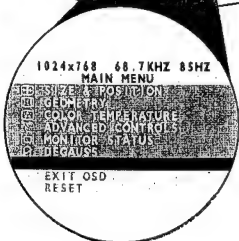
9300° K / 6500° K



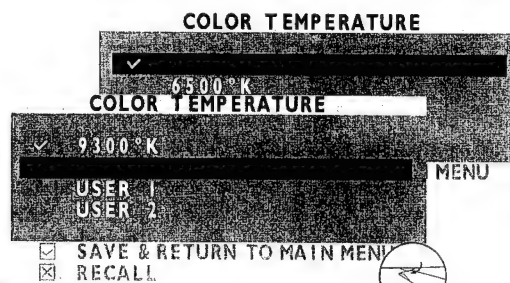
Your monitor has two preset options you select: 9300° K or 6500° K. Computer Aided Design (CAD) usually works best with the 9300° K setting. Desktop Publishing (DTP) usually works best with the 6500° K setting. The screen will change as you scroll between these two settings. Select the one that works best for you, or set up your own setting under User 1 or User 2 on the next page.



- 1** Press the On Screen Display button.



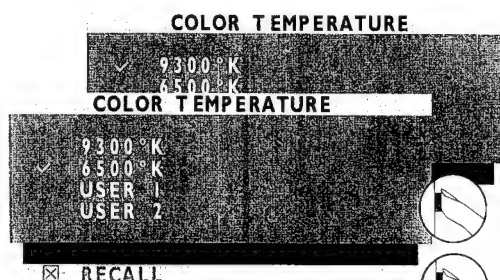
- 2** Turn the ROTARY knob until the COLOR TEMPERATURE window is highlighted. Then press the On Screen Display button.



- 3** Turn the ROTARY knob until 9300° K or 6500° K is highlighted. *Note: a checkmark appears beside the current selection.*



- 5** After the preset setting is saved, the on screen display automatically returns to the Main Menu. To exit, press the On Screen Display button.



- 4** Press the On Screen Display button. A checkmark appears by your selection. Press the On Screen Display button a second time to save your selection.

SMART HELP

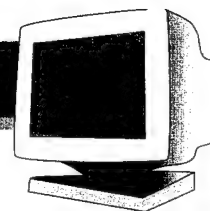
After returning to Main Menu...

... to continue to User 1 or User 2, turn the ROTARY knob until COLOR TEMPERATURE is highlighted. Next, follow steps 2 - 7 under COLOR TEMPERATURE on the next page.

... to select the other preset setting (9300° K or 6500° K), press the OSD button and repeat steps 2 - 5.

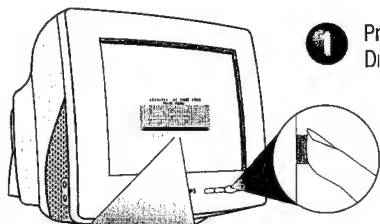
HOW TO USE THE ON SCREEN DISPLAY (OSD)

COLOR TEMPERATURE WINDOW

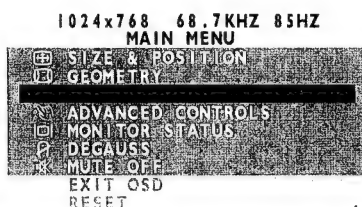


USER 1 / USER 2

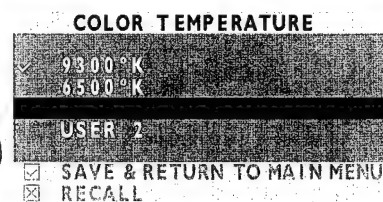
- 8** User 1 and User 2 allow you to individually set the mixture of red, green, and blue that establishes the color balance on your monitor's screen. You can set up to two presets, then select between them for different tasks. You can only use one preset at a time



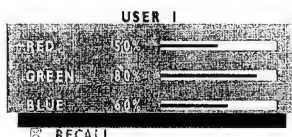
- 1** Press the On Screen Display button.



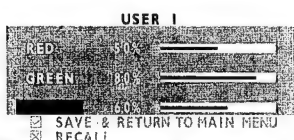
- 2** Turn the ROTARY knob until the COLOR TEMPERATURE window is highlighted. Next, press the On Screen Display button.



- 3** Turn the Rotary knob until User 1 is highlighted. *Note: a checkmark appears beside the current selection.*



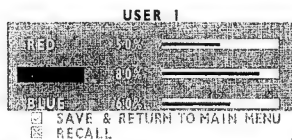
- 7** When done with the blue, press the On Screen Display button to save the changes. Next, see SMART HELP below for options.



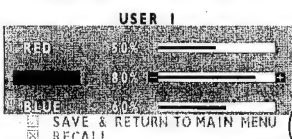
- 6** When done with green, press the On Screen Display button. BLUE will be highlighted.



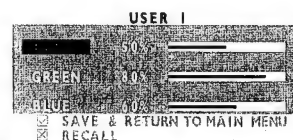
Next, to adjust the blue, press the On Screen Display button again. Then, turn the ROTARY knob to increase or decrease the blue.



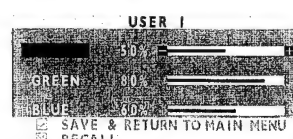
- 5** When done with red, press the On Screen Display button. GREEN will be highlighted.



Next, to adjust the green, press the On Screen Display button again. Then, turn the ROTARY knob to increase or decrease the green.



- 4** First, press the On Screen Display button. RED will be highlighted.



Next, to adjust the red, press the On Screen Display button again. Then, turn the ROTARY knob to increase or decrease the red.

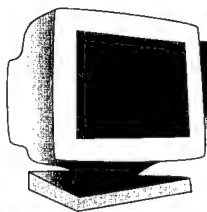
SMART HELP

After returning to COLOR TEMPERATURE...

... to continue to User 2, turn the ROTARY knob until User 2 is highlighted. Then, press the On Screen Display button and follow steps 4 - 7.

... to continue to the Main Menu, press the On Screen Display button once more after completing step 7 above. Now, to select another window from the Main Menu - for example, GEOMETRY - turn to the next page and follow steps 2a - 5c.

... to exit the On Screen Display completely, press the On Screen Display button twice more after completing step 7 above.



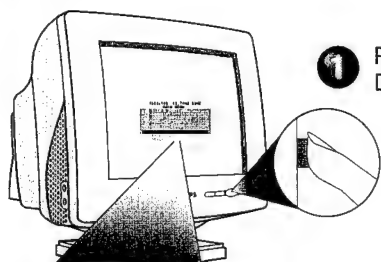
HOW TO USE THE ON SCREEN DISPLAY (OSD)

GEOMETRY WINDOW

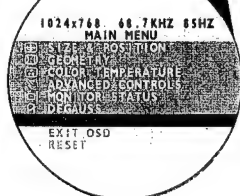
ROTATION, PINCUSHION, TRAPEZOID, BALANCED PINCUSHION, PARALLELOGRAM



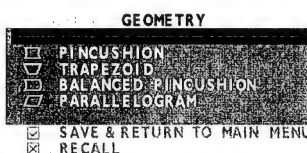
Follow the steps below to adjust any of the five preset options (ROTATION, PINCUSHION, TRAPEZOID, BALANCED PINCUSHION, or PARALLELOGRAM). You can make individual adjustments to each of the preset options. *Note: use these features only when the picture is not square.*



- 1** Press the On Screen Display button.



- 2a** Turn the ROTARY knob until the GEOMETRY window is highlighted. Next, press the On Screen Display button. Then, if necessary, turn the ROTARY knob until ROTATION icon is highlighted.

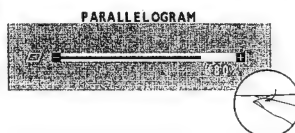
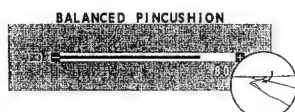


- 2b** Press the On Screen Display button. Then, turn the ROTARY knob to adjust the rotation.



- 2c** When done, press the On Screen Display button to save the change and return to GEOMETRY window.

- 5a** To select BALANCED PINCUSHION or PARALLELOGRAM, turn the ROTARY knob until BALANCED PINCUSHION or PARALLELOGRAM icon is highlighted. Next, press the On Screen Display button. Then follow steps 4b and 4c to make the appropriate changes.

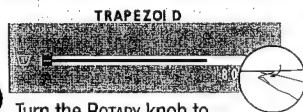


- 4c** When done, press the On Screen Display button. This will save the change and return the screen to GEOMETRY window.

- 3a** To select PINCUSHION, turn the ROTARY knob until PINCUSHION is highlighted. Next, press the On Screen Display button.



- 4b** Turn the ROTARY knob to adjust the trapezoid.



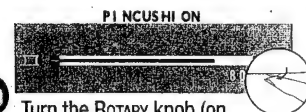
- 4a** To select TRAPEZOID, turn the ROTARY knob until TRAPEZOID icon is highlighted. Next, press the On Screen Display button.



- 3c** When done, press the On Screen Display button. This will save the change and return the screen to GEOMETRY window.



- 3b** Turn the ROTARY knob (on the lower right-hand corner of the monitor) to adjust the pincushion.



SMART HELP

To exit GEOMETRY CONTROLS . . .

. . . but continue to another window, press the On Screen Display button when "SAVE" is highlighted. Next, turn the ROTARY knob until the desired window – for example – SIZE & POSITION – is highlighted. Now, turn to SIZE & POSITION on the next page and follow the instructions, starting with step 2.

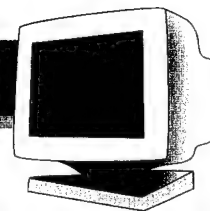
. . . completely, press the On Screen Display button twice. The On Screen Display disappears. All changes will be saved.

To make changes to one item, follow the steps for that item. Then, follow "To exit GEOMETRY CONTROLS . . ."

To return to factory presets, see "To Reset the OSD" on page 15.

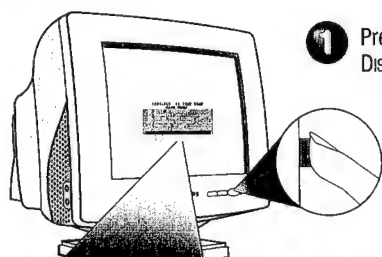
HOW TO USE THE ON SCREEN DISPLAY (OSD)

SIZE & POSITION WINDOW

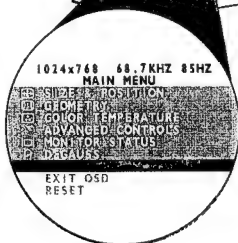


ZOOM

Zoom allows you to adjust the image on your screen, both enlarging it and reducing its overall size. To zoom your screen in or out, follow the steps below.

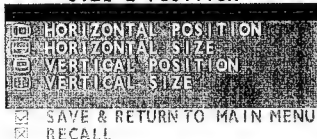


1 Press the On Screen Display button.



2 Turn the ROTARY knob until Size & Position window is highlighted. Next, press the On Screen Display button.

SIZE & POSITION

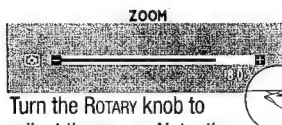


6 Press the On Screen Display button to add your change and return to the Main Menu. Press again to exit. See below for other options.



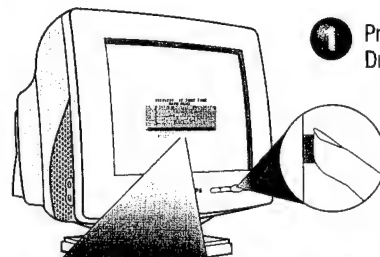
5 When you are done, press the On Screen Display button.

4 Turn the ROTARY knob to adjust the zoom. *Note: the screen expands or contracts as you adjust the ROTARY knob.*

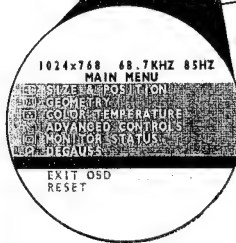


HORIZONTAL POSITION

HORIZONTAL POSITION shifts the image on your screen either to the left or right. Use this feature if your image does not appear centered.

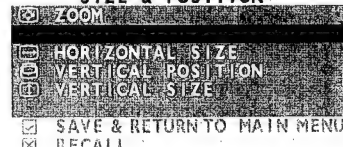


1 Press the On Screen Display button.

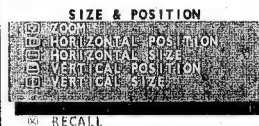


2 Turn the ROTARY knob until Size & Position window is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until HORIZONTAL POSITION is highlighted.

SIZE & POSITION



6 Press the On Screen Display button to add your change and return to the Main Menu. Press again to exit. See below for other options.

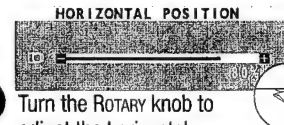


3 Press the On Screen Display button to bring up HORIZONTAL POSITION screen.



5 When you are done, press the On Screen Display button.

4 Turn the ROTARY knob to adjust the horizontal position. *Note: the screen shifts left or right as you turn the ROTARY knob.*



SMART HELP

To make other changes in the Size & Position window ...

... after returning to the Size & Position window [but before press the On Screen Display (OSD) button in step 6], turn the ROTARY knob until another feature – for example, HORIZONTAL POSITION – is highlighted. Next, follow steps 2 - 6 under HORIZONTAL POSITION.

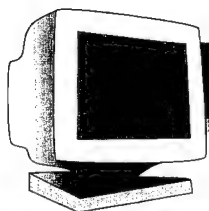
... after you have exited completely, press the OSD button and follow the steps under that feature, for example, HORIZONTAL POSITION.

SMART HELP

To make other changes in the Size & Position window ...

... after returning to the Size & Position window [but before press the On Screen Display (OSD) button in step 6], turn the ROTARY knob until another feature – for example, HORIZONTAL SIZE – is highlighted. Next, follow steps 2 - 6 under HORIZONTAL SIZE.

... after you have exited completely, press the OSD button and follow the steps under that feature, for example, HORIZONTAL SIZE.

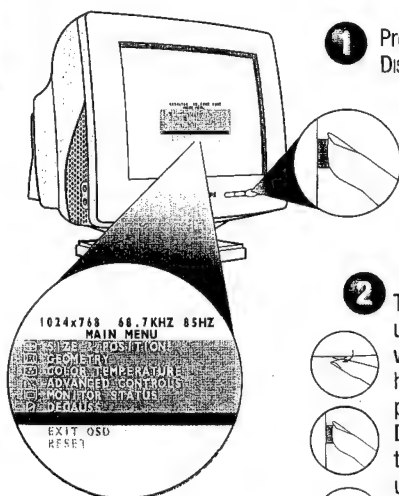


HOW TO USE THE ON SCREEN DISPLAY (OSD)

SIZE & POSITION WINDOW

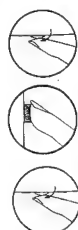
HORIZONTAL SIZE

HORIZONTAL SIZE expands or contracts the image on your screen, pushing it out toward the left and right sides or pulling it in toward the center.

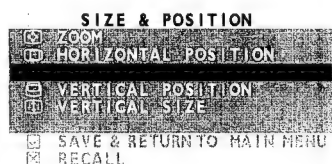


1 Press the On Screen Display button.

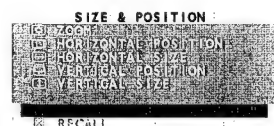
2 Turn the ROTARY knob until **SIZE & POSITION** window is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until **HORIZONTAL SIZE** is highlighted.



6 Press the On Screen Display button to add your change and return to the Main Menu. Press again to exit. See below for other options.



3 Press the On Screen Display button to bring up the **HORIZONTAL SIZE** screen.



5 When you are done, press the On Screen Display button.

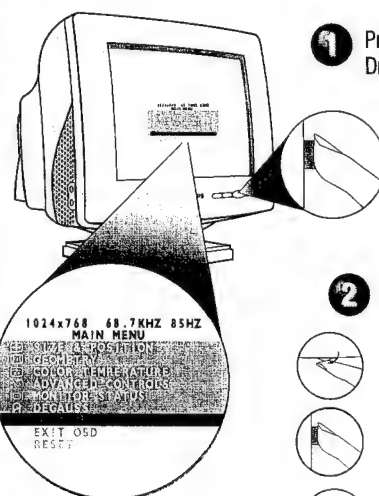


4 Turn the ROTARY knob to adjust the horizontal size. *Note: the screen expands or contracts as you turn the ROTARY knob.*



VERTICAL POSITION VERTICAL SIZE

1 **VERTICAL POSITION** adjusts the image on your screen either up or down. Use this feature if your image does not appear centered. **VERTICAL SIZE** expands or contracts the image on your screen, pushing it out toward the top and bottom or pulling it in toward the center.

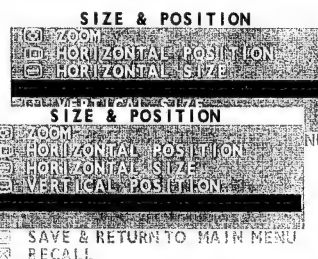


1 Press the On Screen Display button.

2 Turn the ROTARY knob until **SIZE & POSITION** window is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until **VERTICAL POSITION** or **VERTICAL SIZE** is highlighted.



6 Press the On Screen Display button to add your change and return to the Main Menu. Press again to exit. See below for other options.



3 Press the On Screen Display button to bring up the **VERTICAL POSITION** or **VERTICAL SIZE** screen.



5 When you are done, press the On Screen Display button.



4 Turn the ROTARY knob until the image is vertically balanced or the vertical size you want.



SMART HELP

To make other changes in the **SIZE & POSITION** window ...

... after returning to the **Size & Position** window [but before press the On Screen Display (OSD) button in step 6], turn the ROTARY knob until another feature – for example, **VERTICAL POSITION** – is highlighted. Next, follow steps 2 - 6 under **VERTICAL POSITION**.

... after you have exited completely, press the OSD button and follow the steps under that feature, for example, **VERTICAL POSITION**.

SMART HELP

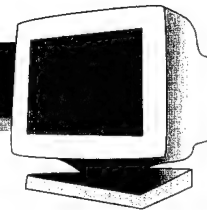
To make other changes in the **Main Menu** ...

... after returning to the **Main Menu** [but before press the On Screen Display (OSD) button a second time in step 6], turn the ROTARY knob until another feature is highlighted. Next, turn to the page for that feature and follow the steps.

... after you have exited completely, press the OSD button and follow the steps under that feature.

HOW TO USE THE ON SCREEN DISPLAY (OSD)

SAVE, CANCEL, EXIT OSD, AND RESET



SAVE & RECALL FROM A WINDOW

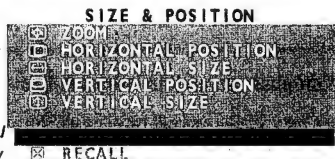
There are three ways to save your changes: by pressing the Front Panel Button, by selecting SAVE from the On Screen Display, or by letting the On Screen Display time out. Each method saves the changes you have made in a particular window.

- For example, to make a change in the brightness, press the BRIGHTNESS button on the front panel, make your change, then press the BRIGHTNESS button again. (See page 4 for details.) You can also let the display time out and the change will be saved. Note: Brightness, Contrast, and Volume do not have a SAVE menu selection.



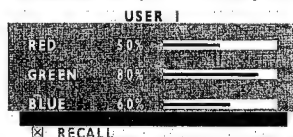
To cancel a change made in the Brightness, Contrast, and Volume windows individually, you must reenter each window and change the setting.

- In some windows (SIZE & POSITION and GEOMETRY), you can save all your changes at once. In the SIZE & POSITION window, you can make changes to each of the five items. When you are done, highlight the SAVE item and press the ON SCREEN DISPLAY button. (See pages 13 - 14 for details.) You can also let the display time out and the change will be saved.



To cancel a change made in the SIZE & POSITION window, you can select CANCEL from the On Screen Display. If you have made a change to only one item – for example, ZOOM – then only ZOOM will be changed back to the previous setting. If more than one item has been changed, but not saved individually, then all the items changed will be returned to their previous settings. For example, if you made changes to ZOOM, HORIZONTAL SIZE, and VERTICAL POSITION and did not save them individually, all three will be changed back when you select Cancel.

- In some windows (ADVANCED CONTROLS AND COLOR TEMPERATURE), only individual saves are possible. For example, in the COLOR TEMPERATURE window, if you select USER 1 and make changes (See page 11 for details.), you must either save or cancel those changes before moving on. While you could wait for the USER 1 window (below) to time out, it is not recommended. Since you have not formally saved this change as your selection, the next time you go into the COLOR TEMPERATURE window, the screen will change to selection (USER 1, USER 2, 9300° K, or 6500° K) last stored by using SAVE. A checkmark appears beside that selection.



To cancel a change made in COLOR TEMPERATURE (or ADVANCED CONTROLS), select CANCEL from the on screen display. Only the last item changed will be changed back. All other items will remain unchanged.

EXIT OSD & RESET FROM THE OSD

Exiting from the On Screen Display removes the On Screen Display from the monitor screen. Resetting from the On Screen Display returns everything in all the windows to factory presets.

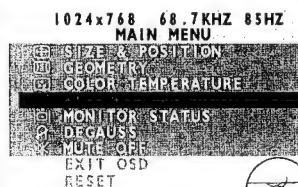
TO EXIT THE ENTIRE ON SCREEN DISPLAY

- When you have finished work in any of the windows of the Main Menu (even selecting MUTE ON / MUTE OFF), you will return to the Main Menu and EXIT OSD will be highlighted. To exit, simply press the ON SCREEN DISPLAY button.



You can, however, use the ROTARY knob and scroll to another menu item, for example, ADVANCED CONTROLS. When ADVANCED CONTROLS is highlighted, press the ON SCREEN DISPLAY button and that

window will replace the Main Menu. You can now make changes in that window. When done, you will, again, return to the Main Menu and EXIT OSD will be highlighted



RESET ENTIRE ON SCREEN DISPLAY

- Selecting RESET from the Main Menu resets **all** the changes you have made in **all** the windows of the Main Menu. For example, if the language (See LANGUAGE, page 7.) has been changed, it is taken back to English.

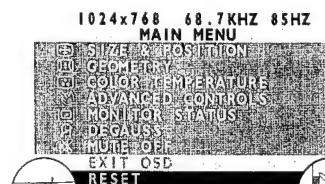
Use this feature only when you want to return all your changes back to their original settings.



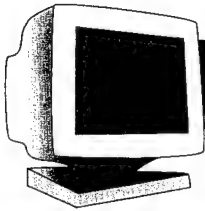
EXITING BRIGHTNESS, VOLUME, & CONTRAST

If you push the VOLUME, BRIGHTNESS, or CONTRAST button to exit (See steps 3 on pages 4 and 5.) and find yourself in the Main Menu, follow the steps below.

- Turn the ROTARY knob until Exit OSD is selected, then press the On Screen Display button.



- Always exit the VOLUME, BRIGHTNESS, or CONTRAST On Screen Displays by pressing the VOLUME, BRIGHTNESS, or CONTRAST button (steps 3 on pages 4 and 5).



ADDITIONAL HOOK UP OPTIONS

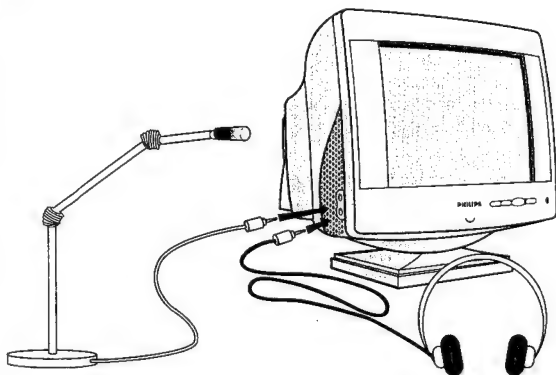
AUDIO AND USB SET UPS

MICROPHONE AND EARPHONES JACKS

In addition to built-in speakers and microphone, you can connect this monitor to optional earphones and a microphone. The jacks are on the left side of the monitor.

To use the microphone with your computer or an amplifier, make the connections shown below.

Note: When the earphones are plugged in, there will be no sound from the built-in speakers.

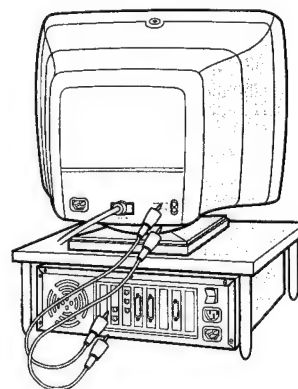


MICROPHONE AND AUDIO-IN JACKS

A microphone jack is on the back of the monitor. Use it and the supplied cable to connect your monitor to your computer or an amplifier (if either has the right type of jack).

On the back of this monitor there is also an audio-in jack. Use it and the supplied cable to connect your monitor to your computer or an amplifier (if either has the right type of jack).

See page 2 for more detailed illustrations of the jacks' locations.



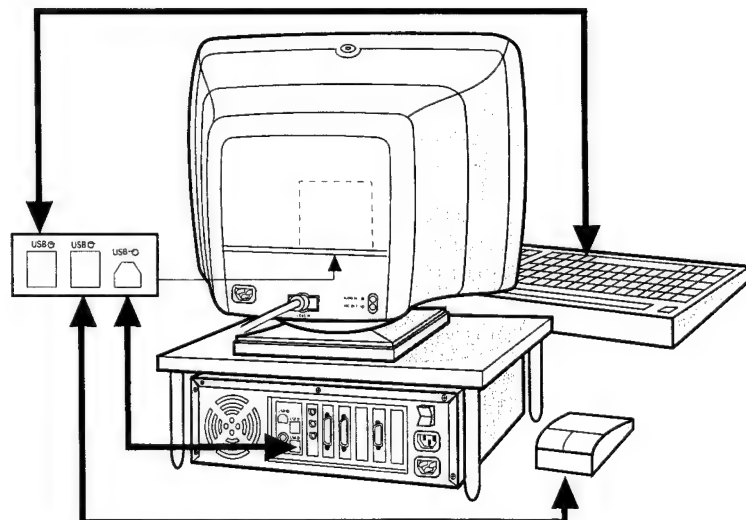
Refer to the owner's manuals included with your earphones and microphone for a detailed guide to setting up these items.

USB CONNECTIONS (OPTIONAL)

USB (Universal Serial Bus) is an innovation in connecting your IBM-compatible computer to your monitor. By using the USB, you will be able to connect your keyboard, mouse, printer, and other peripherals to your monitor instead of having to connect them to your computer. This will give you greater flexibility in setting up your system. Plus, you will have true plug-and-play capability. While the software is still being developed, Philips has included the hardware so you will be ready to take advantage of this next generation in computer development.

For an IBM-compatible Computer:

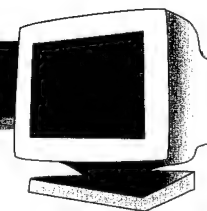
1. Turn off the computer.
2. Connect the (optional) USB Hub and cable to the computer and to the monitor. (Computer must have a USB port.)
3. Connect the power cable.
4. Turn on the monitor. Then turn on the computer.
5. With the installation of the correct software, you will be able to connect specially-made peripherals to the monitor.



Refer to the "Setting Up your Philips monitor" foldout for a more detailed guide to setting up your monitor.

ADDITIONAL INFORMATION

POWER SAVING FEATURE / GLOSSARY



AUTOMATIC POWER SAVINGS & PRESET RESOLUTION MODES

If you have VESA's DPMS compliance display card or software installed in your PC, the monitor can automatically reduce its power consumption when not in use. If input from a keyboard, mouse, or other device is detected, the monitor automatically "wakes up." The table at left shows the power consumption and signalling of this automatic power-saving feature. To turn this feature on and off, see page 7. The table at right shows the 9 factory preset resolution modes. The maximum number of modes is 13. This leaves room for additions.

Power Management Definition						
VESA's mode	Video	H-sync	V-sync	Power used	Power saving(%)	LED color
ON	Active	Yes	Yes	< 110W	0%	Green
Stand-by	Blanked	No	Yes	< 15W	86%	Yellow
Suspend	Blanked	Yes	No	< 15W	86%	Yellow
OFF	Blanked	No	No	< 5W	95.6%	Amber

This monitor is Energy Star compliant and power management compatible.



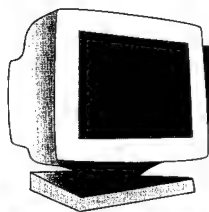
AS AN ENERGY STAR PARTNER, PHILIPS HAS DETERMINED THAT THIS PRODUCT MEETS THE ENERGY STAR GUIDELINES FOR ENERGY EFFICIENCY. The proper operation of the function requires a computer with VESA DPMS power management capabilities. When used with a computer equipped with VESA DPMS, the monitor is Energy Star compliant.

Factory Preset Resolution Modes				
MODE	RESOLUTION	H. FREQ. (KHz)	V. FREQ. (Hz)	STANDARD
1	640 x 400	31.5	70	VGA
2	640 x 480	31.5	60	VGA
3	640 x 480	43.3	85	VESA/85
4	800 x 600	46.9	75	VESA/75
5	800 x 600	53.7	85	VESA/85
6	1024 x 768	60	75	VESA/75
7	1024 x 768	68.7	85	VESA/85
8	1280 x 1024	80	75	VESA/75
9	1280 x 960	86	85	VESA/85

GLOSSARY

Here are a few definitions that may help you.

Brightness	Refers to how light or dark the overall screen is.
Color Temperature	A term used to refer to the color balance, uniformity, and saturation settings on your monitor screen. Color (even white, gray, and black) on your screen is achieved by blending (or balancing) three primary colors: red, green, and blue. As you increase or decrease any one of these colors, the color temperature changes. For example, at 9300° K, you are using more blue in your color temperature; therefore, your screen will be saturated with more blue and should appear uniformly "bluer" from one side of the screen to the other. At 6500° K, you are using more red in your mixture. True color balance is achieved when a gray object shows no traces of either red, green, or blue, regardless of the brightness of the image.
Contrast	Refers to the sharpness of objects on the screen and the ability to easily distinguish one from the other.
Degauss	The process by which metal parts of the screen are demagnetized in order to reduce screen distortion and color impurity.
DDC	(Display Data Channel) is a signaling standard established to help the performance of personal computers. In order to use this function, your computer must be designed for DDC. There are several types of DDC. Most computer monitors are designed for DDC1 and DDC2 Level B (DDC1 /2B).
Geometry	A set of controls that allows you to adjust the alignment of the picture on the monitor screen. The goal is to "square up" the picture. This is done by adjusting such items as balanced pincushion, pincushion, parallelogram, rotation, and trapezoid.
Moire	A fringe pattern caused by the interference between two superimposed line patterns.
Noise	Term used to refer to interference with the monitor's picture.
USB	Universal Serial Bus. A way to connect your IBM-compatible computer, monitor, and peripherals for true Plug-and-Play functions. This is an emerging technology.



ADDITIONAL INFORMATION

COMING TO TERMS WITH THIS BOOK

INDEX

6500° K	10
9300° K	10
Audio Controls	5
Audio in jack	2, 16
Automatic Power Saving	7
Balanced Pincushion	12
Brightness	4
Built-in microphone	2
Cable Cover	2
Cancel	15
Color Temperature	3, 10 - 11
Contrast	4
DDC1 / 2B	8
Degauss	6
Description of controls	2, 3
DTP	10
Earphones jack	2, 16
End-of-life disposal	1
Exit OSD	15
Features	1
Geometry Controls	3, 12
Glossary	17
Hook Ups	Set Up Guide, 16
Horizontal Position	13
Horizontal Size	14
Language	7
LED	2
Main Controls	3, 4-5
Maintenance	1
Microphone jacks	2, 16
Moire	9
Monitor cable plug	2
Monitor Status	6
Mute	3, 5
On Screen Display	2
OSD button	2
Parallelogram	12
Pedestal	2
Pin Assignment	18
Pincushion	12
Power button	Set Up Guide, 2
Power plug	Set Up Guide, 2
Power Saving	7
Reset	15
Resolution Modes	17
Rotary knob	2
Rotation	12
Safety precautions	1
Save	15
Size & Position	3, 13 - 14
Speakers	2
Specifications	18
Sync Input Select	9
Trapezoid	12
Troubleshooting	Set Up Guide, 19
USB hub	2, 16
USB set up	16
User 1, User 2	11
Vertical Position	14
Vertical Size	14
Video Input	13
Volume	5
Warranty (Appendix)	60
Zoom	13

SPECIFICATIONS

GENERAL

CRT

Screen size	:17" (43.2 cm) flat & square
Viewable Image Size (VIS)	:15.9"
Focusing method	:Dynamic focus
Dot pitch	:0.26 mm (horizontal)
Phosphor	:P22 or equivalent, medium short persistence
Screen treatment	:Anti-glare, anti-static

Display area

Factory preset	:306 mm (H) x 230 mm (V)
Maximum usable	:323 mm (H) x 242 mm (V)

Scanning frequency

Horizontal (line)	:30-86kHz (AutoScan)
Vertical (frame)	:50-160 Hz (AutoScan)

Input power

:100 - 240 V AC, 50 - 60 Hz

Power consumption

:100 Watt normal, 110 Watt max.

Thermal dissipation

:341.3 BTU normal,
375.4 BTU maximum

Input signal

Video	:0.7 Vpp, 75 Ohm impedance
Sync	:Separate sync. TTL Composite sync. TTL level Sync on green video

Pedestal

Tilt	:5° forward, 11° backward
Swivel	:90° left, 90° right

Physical

Unit dimension (WxHxD)	:417 x 432 x 467 mm (16.54" x 17.14" x 18.53")
Net weight	:18.0 kg (39.6 lbs.)

Operating conditions

Temperature	:0° C - 40° C
Humidity	:10% - 90%

Storage conditions

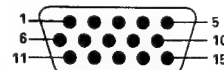
Temperature	:-25° C - 65° C
Humidity	:5% - 95%

Specifications subject to change without notification.

PIN ASSIGNMENT

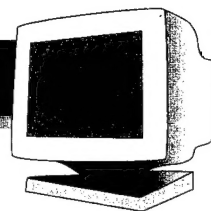
The 15-pin D-sub connector (male) of the signal cable:

Pin No.	Assignment
1	Red video input
2	Green video input
3	Blue video input
4	Identical output - connected to pin 10
5	Self test
6	Red video ground
7	Green video ground
8	Blue video ground
9	No pin
10	Logic ground
11	Identical output - connected to pin 10
12	Serial data line (SDA)
13	H. Sync / H+V
14	V. Sync (VCLK for DDC)
15	Data clock line (SCL)



ADDITIONAL INFORMATION

WHAT TO DO IF SOMETHING ISN'T WORKING



TROUBLESHOOTING

Having trouble? Something not working? Before calling for help, try these suggestions.

HAVING THIS PROBLEM?

No Picture
(Power LED not lit)

No Picture
(Power LED is Amber
or Yellow)

No Picture
(Power LED is Green)

Screen shows



when you turn on
the monitor.

No Color or intermittent
Black-and-White

Color appears blotchy

Missing one or
more colors

Dim Picture

Picture is too large
or too small

Edges of the picture
are not square

Picture has a double
image

Picture is not sharp

No Audio

Unstable Picture

Windows '95 cannot
find your video card

CHECK THESE ITEMS

Make sure the Power cable is plugged in the wall and back of the monitor.
Power button on top of the monitor should be in the ON position.
Disconnect the monitor from the power outlet for about one minute.

Make sure the computer is turned on.
Make sure the monitor cable is properly connected to your computer.
Check to see if the monitor cable has bent pins.
The Energy Saving Feature may be activated. See pages 7 and 17 for details.

Make sure the Brightness and Contrast controls are set correctly. See page 4 for details
Make sure the monitor cable is properly connected to your computer.
Check to see if the monitor cable has bent pins.
Make sure the computer Power button is on.

Make sure the monitor cable is properly connected to your computer. See Setting Up Guide.
Check to see if the monitor cable has bent pins.
Make sure the computer is turned on

If you are using a non-VESA-DDC standard video card, turn the DDC1 / 2B feature Off. See page 8.

The picture may need degaussing. See page 6 for details.
Remove any nearby magnetic objects.
Face the monitor East for best picture quality.

Check user settings of Color Temperature. See pages 10 and 11 for details.
Make sure the monitor cable is properly connected to your computer.
Check to see if the monitor cable has bent pins.
Adjust Sync Input Select. See page 9 for details.

Adjust the Brightness and Contrast controls. See page 4 for details.
Check your video card and the manual instructions for it. It may be a non-VESA-DDC Standard card.
Adjust Sync Input Select. See page 9 for details.

Adjust the Horizontal and/or Vertical Size. See pages 13 and 14 for details.
Adjust the Zoom. See page 13 for details.

The geometry controls require adjusting. See page 12 for details.

Eliminate the use of a video extension cable and/or video switch box.
Face the monitor East for best picture quality.

Check to make sure Moire is switched off. See page 9.
Adjust Sync Input Select. See page 9 for details.

Make sure mute is not activated. See page 5 for details.
Make sure the Audio-in cable is securely plugged into the monitor and the audio source.
See pages 2 and 16 for details.

Increase your refresh rate. Consult your computer manual for details.

Select "Super VGA" under STANDARD DISPLAY TYPES, or contact your video card manufacturer
for the right drivers.

For further assistance, contact Philips at (800) 835-3506 or (423) 475-0280.

TELEVISION/MONITOR SAFETY GUIDELINES FOR THE PROFESSIONAL SERVICE TECHNICIAN

Safety Checks

After the original service problem has been corrected, a complete safety check should be made. Be sure to check over the entire set, not just the areas where you have worked. Some previous servicer may have left an unsafe condition, which could be unknowingly passed on to your customer. Be sure to check all of the following:

Fire and Shock Hazard

1. Be sure all components are positioned in such a way as to avoid the possibility of adjacent component shorts. This is especially important on those chassis which are transported to and from the service shop.
2. Never release a repaired unit unless all protective devices such as insulators, barriers, covers, strain reliefs, and other hardware have been installed in accordance with the original design.
3. Soldering and wiring must be inspected to locate possible cold solder joints, solder splashes, sharp solder points, frayed leads, pinched leads, or damaged insulation (including the ac cord). Be certain to remove loose solder balls and all other loose foreign particles.
4. Check across-the-line components and other components for physical evidence of damage or deterioration and replace if necessary. Follow original layout, lead length, and dress.
5. No lead or component should touch a receiving tube or a resistor rated at 1 watt or more. Lead tension around protruding metal surfaces or edges must be avoided.
6. Critical components having special safety characteristics are identified with an s by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbols on the schematic diagrams and/or exploded views.
7. When servicing any unit, always use a separate isolation transformer for the chassis. Failure to use a separate isolation transformer may expose you to possible shock hazard, and may cause damage to servicing instruments.
8. Many electronic products use a polarized ac line cord (one wide pin on the plug). Defeating this safety feature may create a potential hazard to the servicer and the user. Extension cords which do not incorporate the polarizing feature should never be used.
9. After reassembly of the unit, always perform an ac leakage test or resistance test from the line cord to all exposed metal parts of the cabinet. Also, check all metal control shafts (with knobs removed), antenna terminals, handles, screws, etc. to be sure the unit may be safely operated without danger of electrical shock.

* Broken line —

Implosion

1. All picture tubes used in current model receivers are equipped with an integral implosion system. Care should always be used, and safety glasses worn, whenever handling any picture tube. Avoid scratching or otherwise damaging the picture tube during installation.
2. Use only replacement tubes specified by the manufacturer.

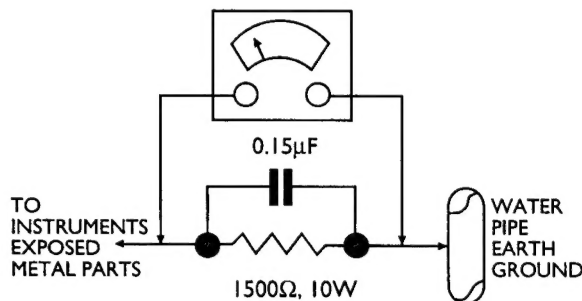
X-radiation

1. Be sure procedures and instructions to all your service personnel cover the subject of X-radiation. Potential sources of X-rays in TV receivers are the picture tube and the high voltage circuits. The basic precaution which must be exercised is to keep the high voltage at the factory recommended level.
2. To avoid possible exposure to X-radiation and electrical shock, only the manufacturer's specified anode connectors must be used.
3. It is essential that the service technician has an accurate HV meter available at all times. The calibration of this meter should be checked periodically against a reference standard.
4. When the HV circuitry is operating properly there is no possibility of an X-radiation problem. High voltage should always be kept at the manufacturer's rated value - no higher - for optimum performance. Every time a color set is serviced, the brightness should be run up and down while monitoring the HV with a meter to be certain that the HV is regulated correctly and does not exceed the specified value. We suggest that you and your technicians review test procedures so that HV and HV regulation are always checked as a standard servicing procedure, and the reason for this prudent routine is clearly understood by everyone. It is important to use an accurate and reliable HV meter. It is recommended that the HV reading be recorded on each customer's invoice, which will demonstrate a proper concern for the customer's safety.
5. When troubleshooting and making test measurements in a receiver with a problem of excessive high voltage, reduce the line voltage by means of a Variac to bring the HV into acceptable limits while troubleshooting. Do not operate the chassis longer than necessary to locate the cause of the excessive HV.

6. New picture tubes are specifically designed to withstand higher operating voltages without creating undesirable X-radiation. It is strongly recommended that any shop test fixture which is to be used with the new higher voltage chassis be equipped with one of the new type tubes designed for this service. Addition of a permanently connected HV meter to the shop test fixture is advisable. The CRT types used in these new sets should never be replaced with any other types, as this may result in excessive X-radiation.
7. It is essential to use the specified picture tube to avoid a possible X-radiation problem.
8. Most TV receivers contain some type of emergency "Hold Down" circuit to prevent HV from rising to excessive levels in the presence of a failure mode. These various circuits should be understood by all technicians servicing them, especially since many hold down circuits are inoperative as long as the receiver performs normally.

Leakage Current Cold Check

1. Unplug the ac line cord and connect a jumper between the two prongs of the plug.
2. Turn on the power switch.
3. Measure the resistance value between the jumpered ac plug and all exposed cabinet parts of the receiver, such as screw heads, antennas, and control shafts. When the exposed metallic part has a return path to the chassis, the reading should be between 1 megohm and 5.2 megohms. When the exposed metal does not have a return path to the chassis, the reading must be infinity. Remove the jumper from the ac line cord.



Leakage Current Hot Check

1. Do not use an isolation transformer for this test. Plug the completely reassembled receiver directly into the ac outlet.
2. Connect a 1.5k, 10W resistor paralleled by a 0.15µF capacitor between each exposed metallic cabinet part and a good earth ground such as a water pipe, as shown above.
3. Use an ac voltmeter with at least 5000 ohms/ volt sensitivity to measure the potential across the resistor.
4. The potential at any point should not exceed 0.75 volts. A leakage current tester may be used to make this test; leakage current must not exceed 0.5milliamps. If a measurement is outside of the specified limits, there is a possibility of shock hazard. The receiver should be repaired and rechecked before returning it to the customer.
5. Repeat the above procedure with the ac plug reversed. (Note: An ac adapter is necessary when a polarized plug is used. Do not defeat the polarizing feature of the plug.)

Picture Tube Replacement

The primary source of X-radiation in this television receiver is the picture tube. The picture tube utilized in this chassis is specially constructed to limit X-radiation emissions. For continued X-radiation protection, the replacement tube must be the same type as the original, including suffix letter, or a Philips approved type.

Parts Replacement

Many electrical and mechanical parts in Philips television sets have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. The use of a substitute part which does not have the same safety characteristics as the Philips recommended replacement part shown in this service manual may create shock, fire, or other hazards.

WARNING: Before removing the CRT anode cap, turn the unit **OFF** and short the HIGH VOLTAGE to the CRT DAG ground.
SERVICE NOTE: The CRT DAG is not at chassis ground.

Setting Up your Philips monitor

Installation de votre moniteur Philips.

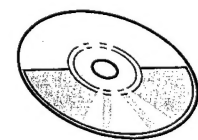
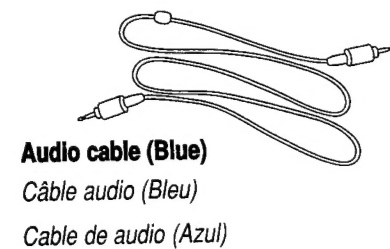
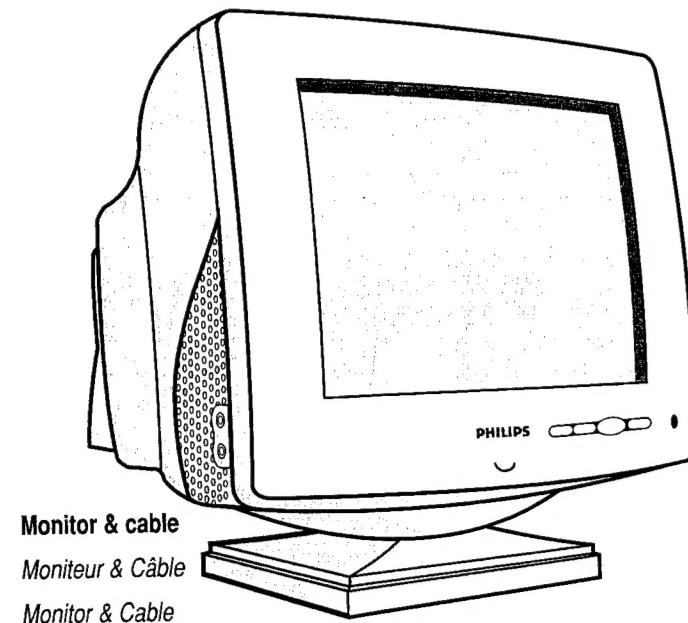
Configuración de su monitor Philips.

This foldout is designed to help you use your monitor as soon as possible. Refer to your owner's manual for detailed information. You may also contact us at our web site: <http://www.monitors.be.philips.com>

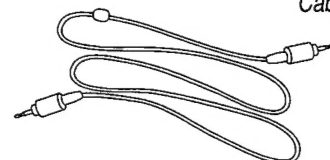
Ce dépliant est conçu pour vous aider à utiliser votre moniteur du plus vite possible. Consulter votre manuel d'utilisateur pour des informations détaillées. Vous pouvez aussi nous contacter sur notre site Web: <http://www.monitors.be.philips.com>

Esta hoja plegable está diseñada para ayudarlo a usar su monitor tan pronto como sea posible. Consulte su manual si desea información detallada. También puede comunicarse con nosotros a través de nuestra página web: <http://www.monitors.be.philips.com>

Because of a policy continuous product improvement, the information mentioned by this documents are subject to change without notice.
Du fait de notre politique d'amélioration constante de nos produits, les spécifications ci-dessus sont sujettes à modification sans avis préalable.
En el marco de la política de mejora continuada de nuestros productos, las especificaciones arriba indicadas están sujetas a cambio sin previo aviso.

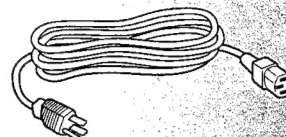
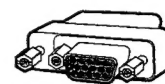


(Windows 95 driver depends actual item enclosed)

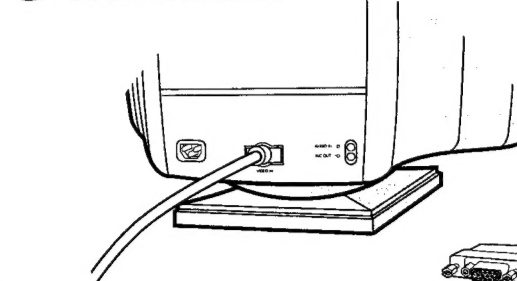


1 Unpack all the parts.

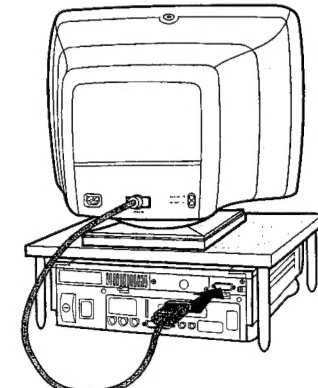
Déballer toutes les pièces.
Desembale todas las piezas.



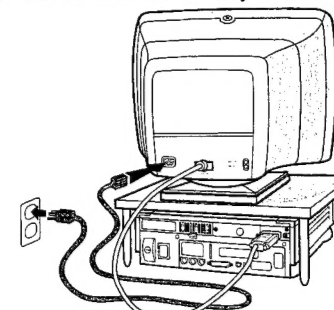
2 Connect the special Mac adapter (May not be included.) to one end of the monitor cable.



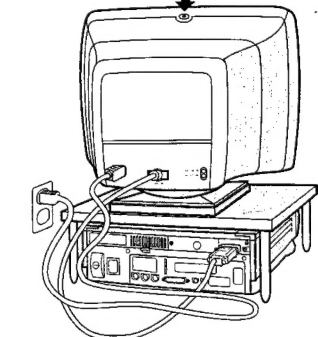
3 Turn off the computer. Then connect the monitor cable.



4 Connect the power cable. Make sure the power plug and the wall socket are easily accessible.



5 Turn on the monitor. Then turn on the computer.



Setting Up your Philips monitor

Installation de votre moniteur Philips.

Configuración de su monitor Philips.

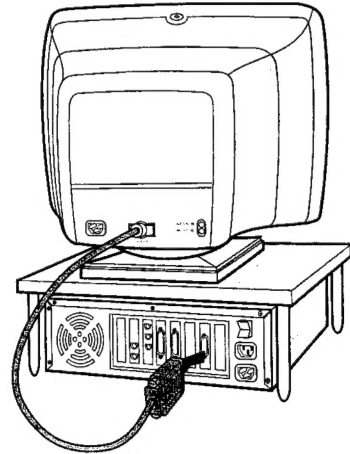
IBM-compatible computer hookup continued from step 1 on other side.

Connecter l'ordinateur compatible IBM, suite de la première étape de l'autre côté.

Conexión del ordenador compatible con IBM (continuación del paso 1 del otro lado de la página).

Monitor Model for Windows'95 Driver:
Philips 107MB (17 inch/CM2300)

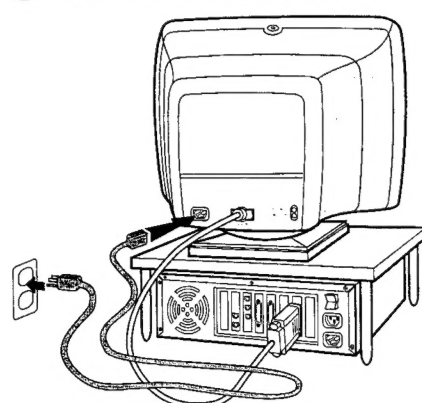
- 2** Turn off the computer. Then connect the monitor cable.



Eteindre l'ordinateur, puis connecter le câble du moniteur.

Apague el ordenador. Luego conecte el cable del monitor.

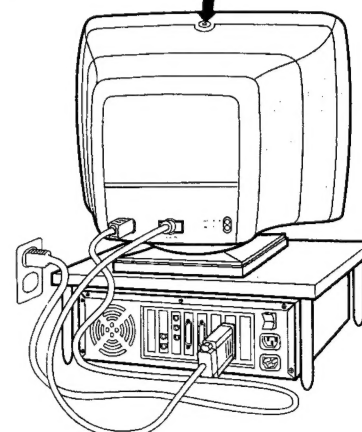
- 3** Connect the power cable. Make sure the power plug and the wall socket are easily accessible.



Connecter le câble de puissance. S'assurer que la fiche secteur et la prise murale soient facilement accessibles.

Conecte el cable de energía. Verifique que se pueda acceder fácilmente al tomacorriente y al enchufe de pared.

- 4** Turn on the monitor. Then turn on the computer.



Allumer le moniteur, puis l'ordinateur.

Encienda el monitor. Luego encienda el ordenador.

If you have Windows '95 . . .

follow these steps to complete setting up your monitor.

1. Start Windows '95 and install diskette supplied with this monitor.
2. Click on the "START" icon. Next, click on the "SETTINGS" icon. Then click on "CONTROL PANEL."
3. Double-click on "DISPLAY" icon. Next, click on "SETTINGS" tab. Then click on "ADVANCED PROPERTIES" dialog box.
4. Click on "MONITOR" tab.
- 5a. If you have an old computer, click on "CHANGE" dialog box. Next, "SELECT DEVICE" screen appears. Now click on "HAVE DISK" dialog box. and select A drive
Or
- 5b. If you have a new computer, "SELECT DEVICE" screen automatically appears. Click on "HAVE DISK" dialog box and select A drive.
6. Select "OK" in the "INSTALL FROM DISK" dialog box. If model name of the Philips monitor is correct, click "OK" tab in the "SELECT DEVICE" dialog box.
7. Click "CLOSE" tab in the "ADVANCED PROPERTIES" dialog box. If your Windows '95 version is different or you need more detailed installation information, please refer to the Windows '95 user's manual. **For additional information on the monitor, please refer to the owner's manual.**

Note: if you insert the disk in your B drive, you will make your selections from that drive and not the A drive.

Si vous avez Windows '95 . . .

suivez les étapes suivantes pour terminer l'installation de votre moniteur.

1. Démarrer Windows 95 et installer le disquette fournie avec votre moniteur.
2. Cliquer sur l'icône "DÉMARRER", ensuite, cliquer sur l'icône "PARAMETRES", puis cliquer sur l'icône "PANEAU DE CONFIGURATION".
3. Cliquer deux fois sur l'icône "AFFICHER", ensuite cliquer sur l'onglet "PARAMETRES", puis cliquer sur la boîte de dialogue "PROPRIETES AVANCEES".
4. Cliquer sur l'onglet "MONITEUR".
- 5a. Si vous avez un ancien ordinateur, cliquer sur la boîte de dialogue "CHANGER", ensuite l'écran "SELECTIONNER UNITE" apparaît. Maintenant cliquer sur la boîte de dialogue "DISQUETTE FOURNIE", et sélectionner le lecteur A.
ou
- 5b. Si vous avez un ordinateur récent, l'écran "SELECTIONNER UNITE" apparaît automatiquement. Cliquer sur la boîte de dialogue "DISQUETTE FOURNIE" et sélectionner le lecteur A.
6. Sélectionner "OK" dans la boîte de dialogue "INSTALLER A PARTIR DE LA DISQUETTE". Si le nom du modèle de moniteur Philips est correct, cliquer sur l'onglet "OK" dans la boîte de dialogue SELECTIONNER UNITE
7. Cliquer sur l'onglet "FERMER" dans la boîte de dialogue "PROPRIETES AVANCEES". Si votre version Windows 95 est différente ou si vous voulez des informations plus détaillées sur l'installation, veuillez vous référer au manuel d'utilisateur de Windows 95. **Pour des informations complémentaires sur le moniteur, veuillez vous référer au manuel d'utilisateur.**

WHAT TO DO IF YOUR MONITOR ISN'T WORKING

Make sure . . .

- . . . the Power cable is plugged in the wall and the rear of the monitor.
- . . . the Power button on top of the monitor should be in the ON position.
- . . . the monitor cable is properly connected to the back of the monitor and the computer.
- . . . to check to see if the monitor cable has bent pins.

See page 19 of the owner's manual for troubleshooting tips. Or in North America contact Philips at (800) 835-3506 or (423) 475-0280. For all other regions, see the phone numbers in the warranty appendix in the owner's manual. For warranty questions, please see your owner's manual.

QUE FAIRE SI VOTRE MONITEUR NE MARCHE PAS

S'assurer . . .

- . . . que le câble de puissance soit branché dans le mur et à l'arrière du moniteur.
- . . . que le bouton Marche/Arrêt au dessus de votre moniteur soit sur MARCHE.
- . . . que le câble du moniteur soit bien connecté à l'arrière du moniteur et de l'ordinateur.
- . . . de vérifier que le câble du moniteur n'ait pas de fiches tordues.

Voir page 39 du manuel d'utilisateur pour des conseils de dépannage. Ou bien, en Amérique du Nord, téléphonez à Philips à (800) 835-3506 ou à (423) 475-0280. Pour toute autre région du monde, consultez les numéros de téléphone dans l'appendice de la garantie qui se trouve dans le manuel du propriétaire. Si vous avez des questions concernant la garantie, veuillez consulter votre manuel d'utilisateur.

¿QUÉ HACER SI SU MONITOR NO FUNCIONA?

Verifique . . .

- . . . si el cable de energía está enchufado a la fuente de energía y a la parte posterior del monitor.
- . . . si el botón de alimentación en la parte superior del monitor está en la posición ON.
- . . . si el cable del monitor está debidamente conectado a la parte posterior del monitor y del ordenador.
- . . . que las clavijas del cable del monitor no estén dobladas.

En la página 59 del manual del propietario encontrará consejos sobre la localización de fallas. O en América del Norte, comuníquese con Philips al teléfono (800) 835-3506 (llamada gratis) ó al (423) 475-0280. Para todas las otras regiones, vea los números del teléfono en el apéndice de la garantía en el manual del usuario. Para consultas sobre la garantía, consulte el manual del propietario.

Si tiene Windows '95 . . .

siga estos pasos para finalizar la configuración de su monitor.

1. Inicie Windows '95 e instale el disco que se suministra con su monitor.
2. Haga clic en el icono "INICIO". Luego haga clic en el icono "CONFIGURACIÓN". Luego haga clic en "PANEL DE CONTROL".
3. Haga doble clic en el icono "PANTALLA". A continuación haga clic en la etiqueta "CONFIGURACIÓN" y luego en el cuadro de diálogo "PROPIEDADES AVANZADAS".
4. Haga clic en la etiqueta "MONITOR".
- 5a. Si usted tiene un ordenador viejo, haga clic en el cuadro de diálogo "CAMBIAR". Luego aparece la pantalla "SELECCIÓN DE DISPOSITIVO". Ahora haga clic en el cuadro de diálogo "UTILIZAR DISCO" y seleccione la unidad A.
O
- 5b. Si tiene un ordenador nuevo, aparece automáticamente la pantalla "SELECCIONAR DISPOSITIVO". Haga clic en el cuadro de diálogo "UTILIZAR DISCO" y seleccione la unidad A.
6. Seleccione "ACEPTAR" en el cuadro de diálogo "INSTALAR DESDE DISCO". Si el nombre del modelo del monitor Philips está correcto, haga clic en la etiqueta "ACEPTAR" del cuadro de diálogo "SELECCIÓN DE DISPOSITIVO".
7. Haga clic en la etiqueta "CERRAR" del cuadro de diálogo "PROPIEDADES AVANZADAS". Si su versión de Windows '95 es diferente o necesita información más detallada acerca de la instalación, consulte el manual del usuario de Windows '95. **Si desea información adicional acerca del monitor, consulte el manual del propietario.**

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